

# NeRC

Northwest Economic Research Center  
College of Urban and Public Affairs



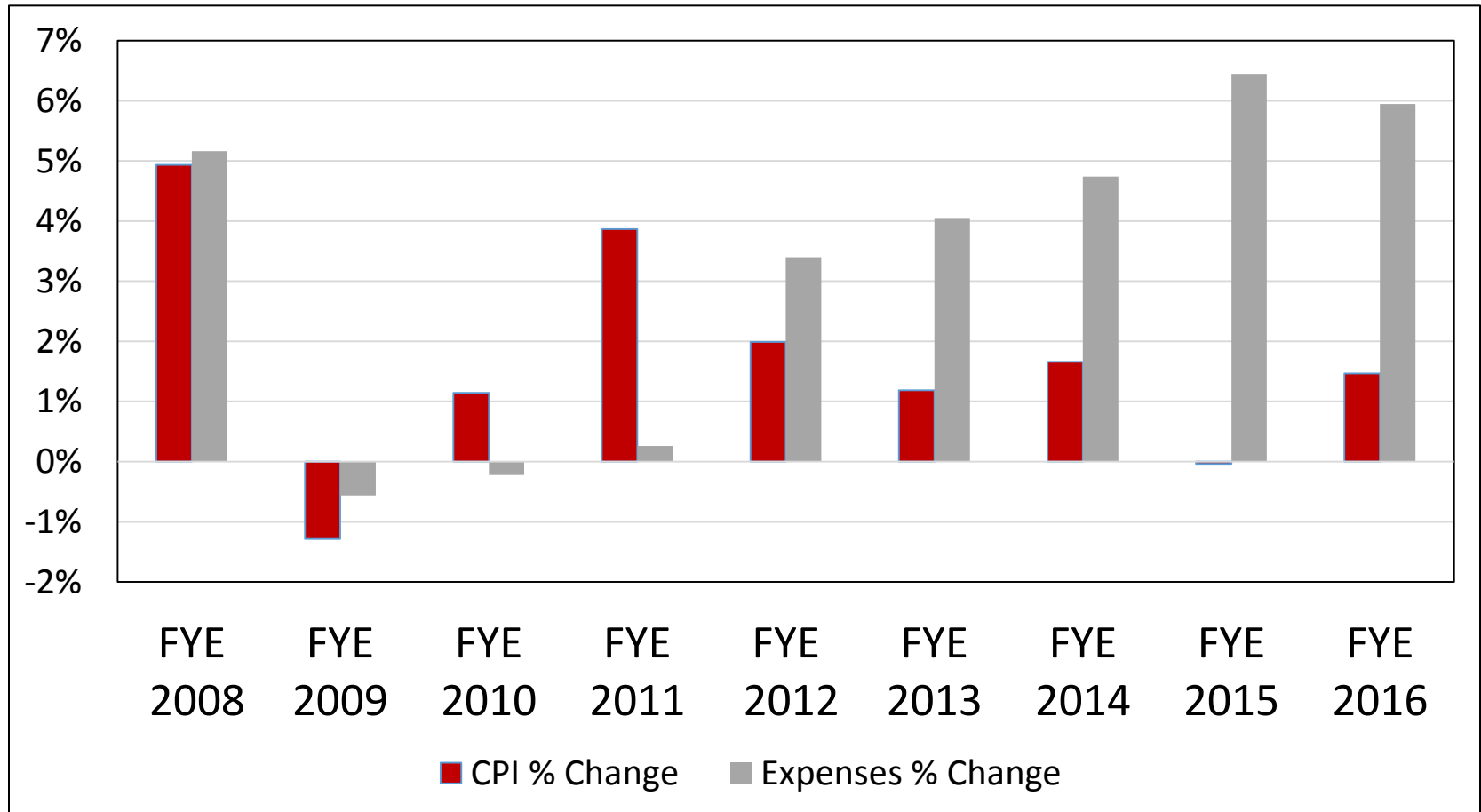
## Disposal & Recycling: An Alternative Index

# Background and Motivation

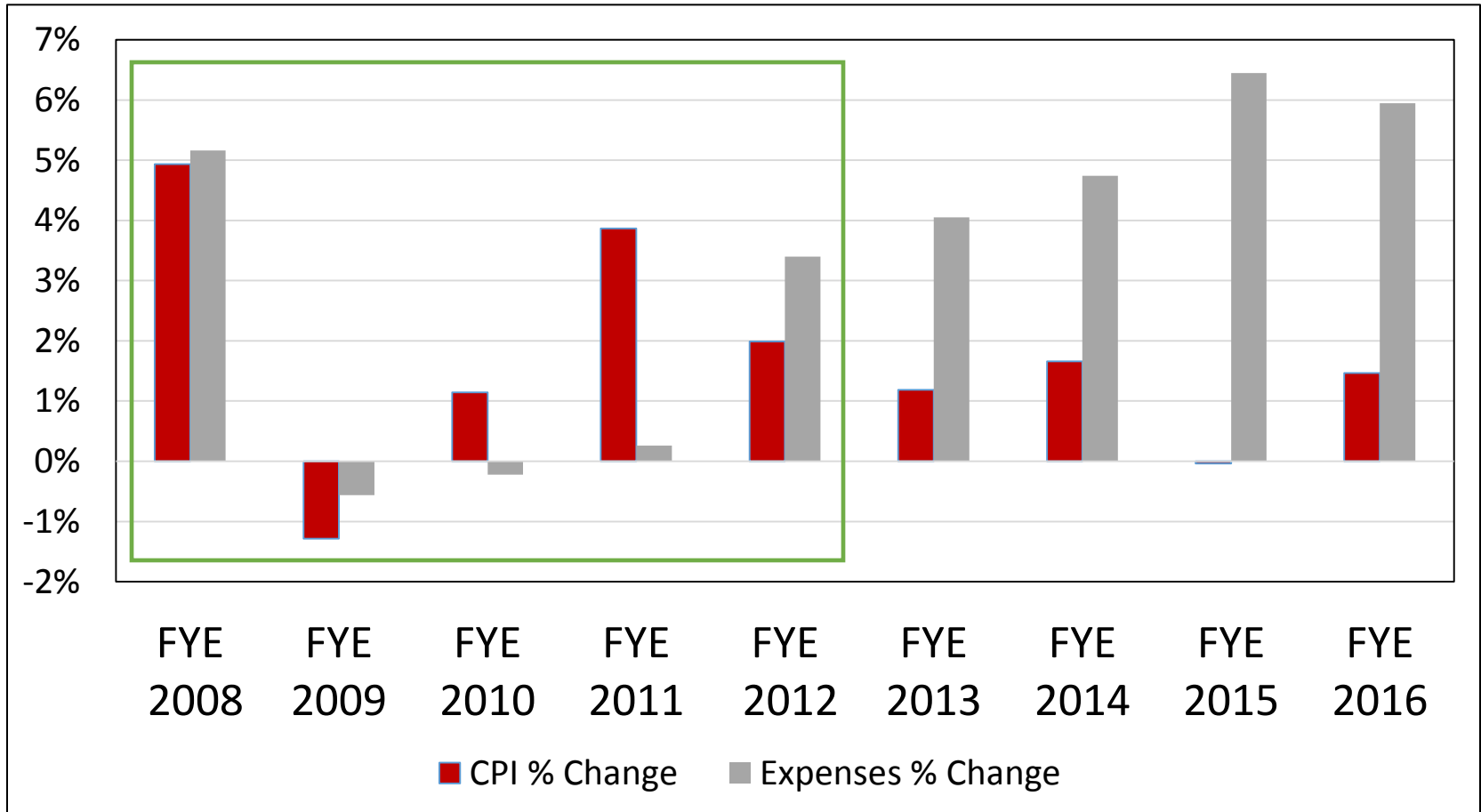
## Characteristics of Rogue Disposal and Recycling (RDR)

- Based out of Medford, Oregon
- Natural Monopoly
- 5-year Rate-reviews
- Intermittent Years based on CPI-U (Relationship?)
- Provided NERC with expense data
- Recycling included as a Net Cost

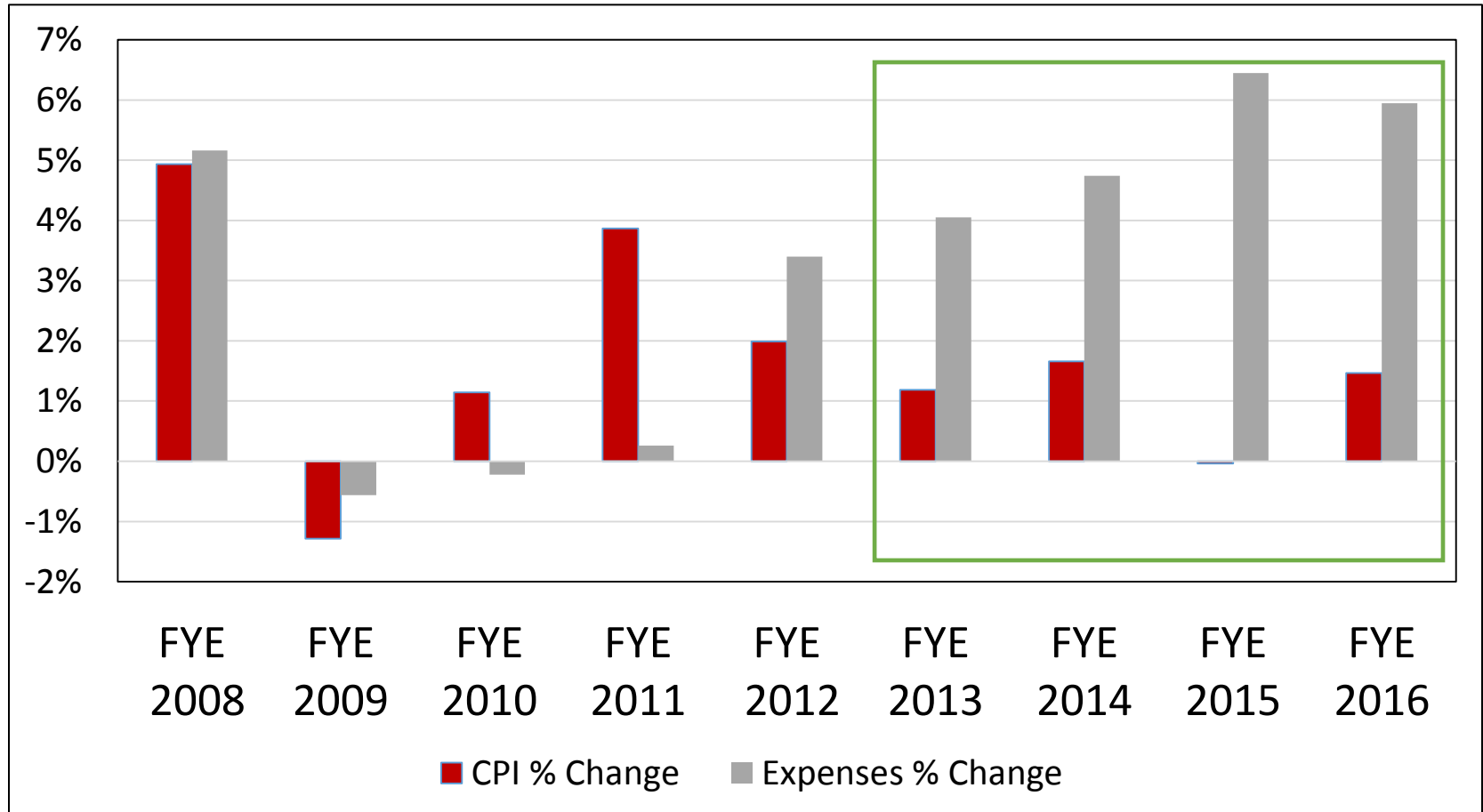
# Motivation: The Split



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## What Happened?

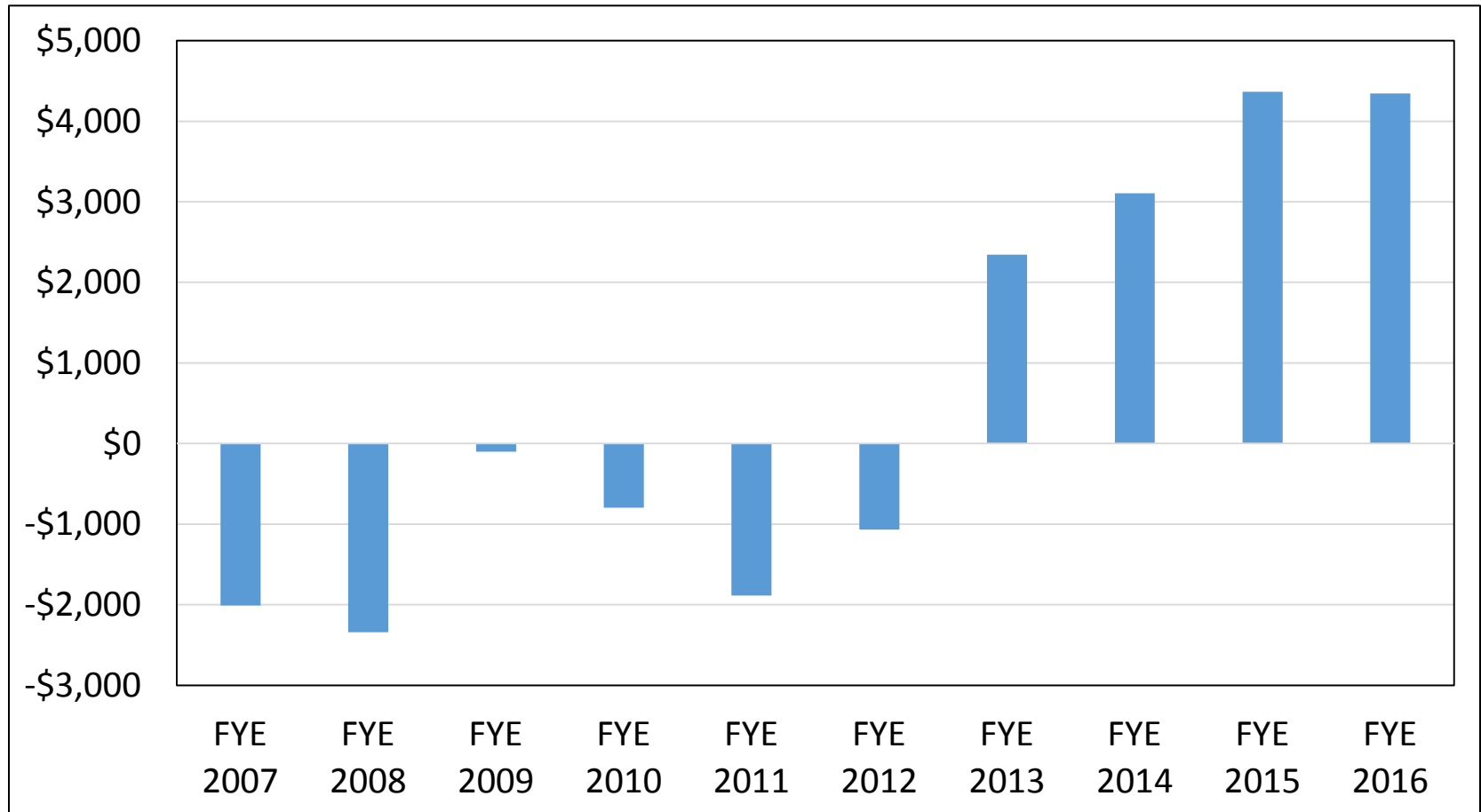
- What happens to recycled plastics?
  - Barges in, barges out
  - New Manufactured Goods (50%+ goes to China in 2013)
  - Thrown out
  - Burned
- China also took 75% of aluminum and 60% of scrap paper in 2013

## What Happened?

- But China's demand started to decline (Industrialization)
- Environmental Concerns
- Implemented the “Green Fence” in 2013
- Price of Oil
- “National Sword” announced this year



# RDR Net Recycling Costs



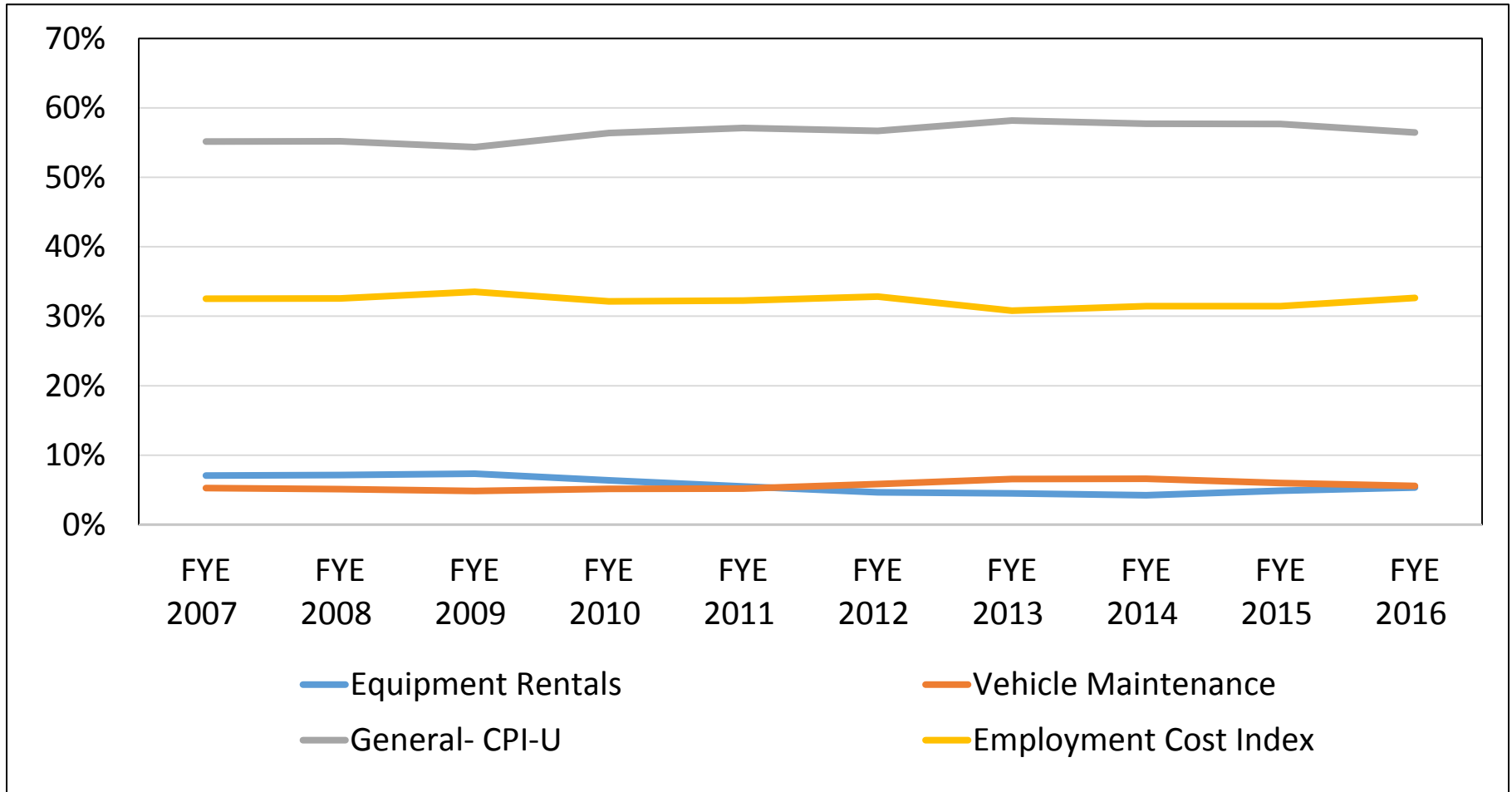
# Building the Index

## Index Criteria

- Theoretically Sound
- More Accurate than the CPI-U
- Composed of Government Data
- Easy to Implement\*

-> Refuse Rate Indices (RRI), and the Simple RRI (SRRI)

## Spending Proportion over Time



## Composing the Simple Refuse Rate Index (SRRI)

- **5.6% - Vehicle Maintenance:** Consumer Price Index for all Urban Consumers: Motor vehicle maintenance and repair (CUSR0000SETD)
- **5.7% - Equipment Rentals:** Producer Price Index for Motor Vehicle Manufacturing (PCU33613361)
- **32.2% - Employee Wages:** Compensation of Employees, Received: Wage and Salary Disbursements: Private Industries (A132RC1)
- **56.5% - All other spending:** CPI for all Urban Consumers. More detail on how this index was constructed can be found in the full technical report. (CPIAUCSL)
- What about recycling?

## The Problem with Recycling

- Even though we are given the actual net cost of recycling....
- You can't calculate the growth rate of a net figure
- Need to take recycling out, use the SRRI method, and then add it back in
- Easy to implement\*?

## An example – Fabricated Expenses

	Fabricated Expenses	
	FYE 2013	FYE 2014
Net Cost of Recycling	10	11
Derived Expenses sans Recycling	80	
Derived Expenses	90	

Data that needs to be filled in  
Given or calculated

## An example – SRRI Calculations

	2013	2014
SRRI Calculation	1088.37	1145.43
SRRI YoY Growth Rate		5.24%

Data that needs to be filled in  
Given or calculated



## An example – Fabricated Expenses

	Fabricated Expenses	
	FYE 2013	FYE 2014
Net Cost of Recycling	10	11
Derived Expenses sans Recycling	80	84.19
Derived Expenses	90	

Data that needs to be filled in  
Given or calculated

## An example – Fabricated Expenses

	Fabricated Expenses	
	FYE 2013	FYE 2014
Net Cost of Recycling	10	11
Derived Expenses sans Recycling	80	84.19
Derived Expenses	90	95.19

Data that needs to be filled in  
Given or calculated

# An example – Fabricated Expenses

## Fabricated Expenses

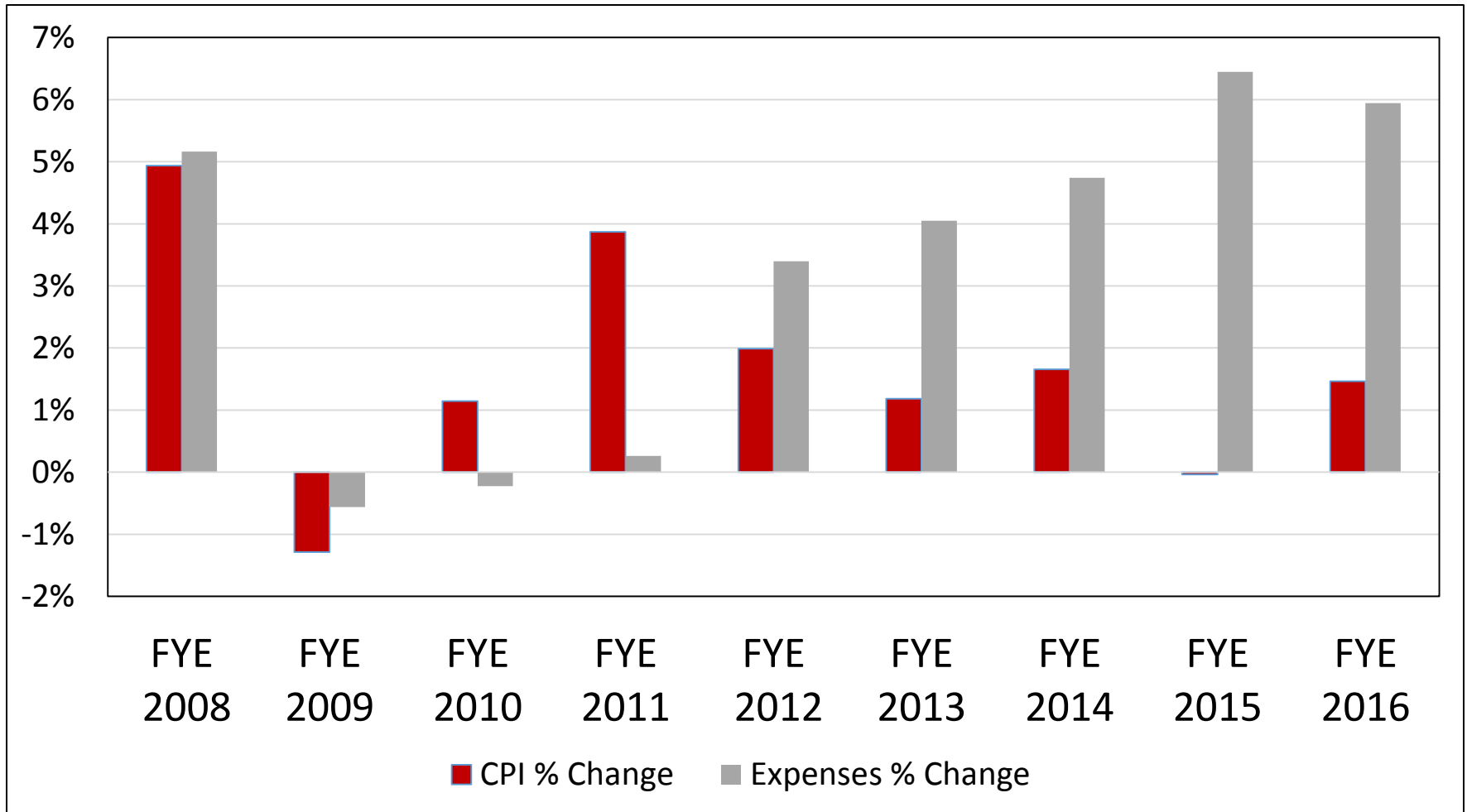
	FYE 2013	FYE 2014
Net Cost of Recycling	10	11
Derived Expenses sans Recycling	80	84.19
Derived Expenses	90	95.19

**Growth Rate = 5.77%**

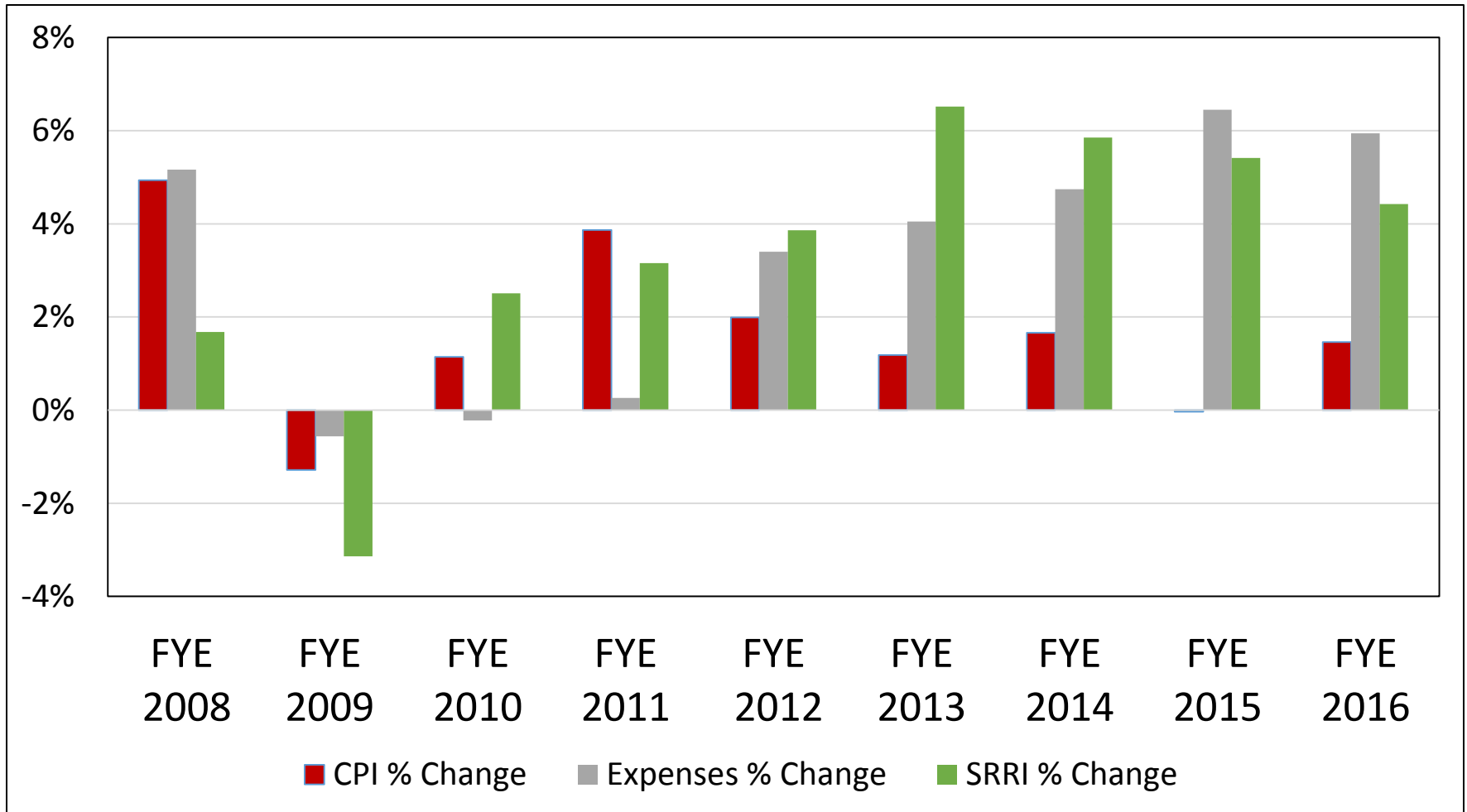
Data that needs to be filled in  
Given or calculated

# Evaluating the Index

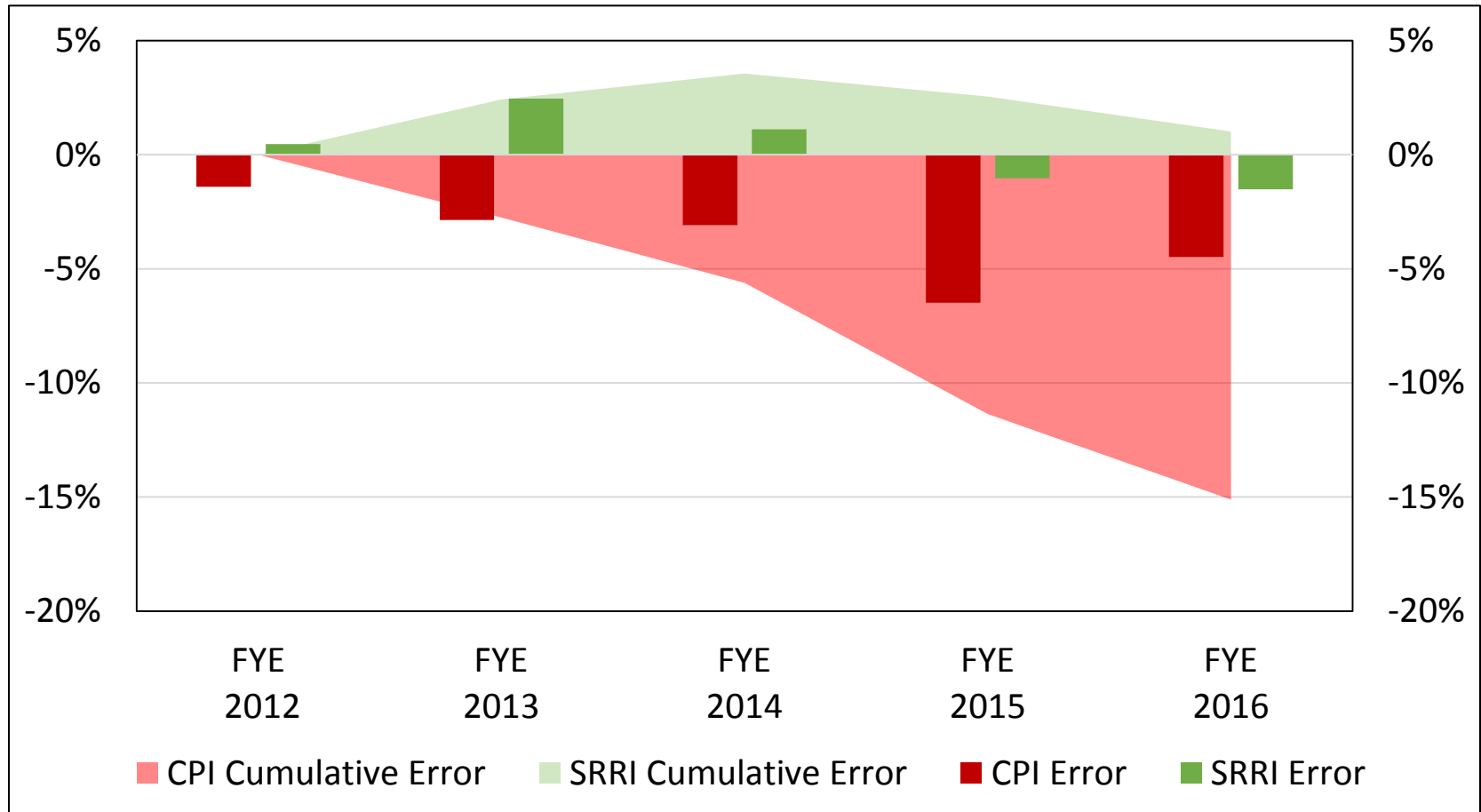
## Over the last decade



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## Cumulative error from FYE 2012-2016



Thank you!