



WSRA CONFERENCE 2018  
NAVIGATING THE  
WAVES OF CHANGE

# How Did We Get Into This Mess & What Can We Do About It?

**Monday, May 21 | 3:00 – 5:00 PM**

**Location: Victoria  
Claugus**

**Sponsored by:**



# How Did We Get Into This Mess & What Can We Do About It?

An Economist's Perspective



# Introduction

- ▶ Dave Claugus, Vice President of Pioneer Recycling Services
  - MRF Processing in Portland & Tacoma
    - Serving all of Oregon & Washington States



# Format & Objectives

- ▶ Presentation, Lots of Discussion
- ▶ Objectives
  - 1. Should be able to answer two questions from decision makers
    - 1. What's going on?
    - 2. What suggestions do you have for fixing this?



# Pop Quiz

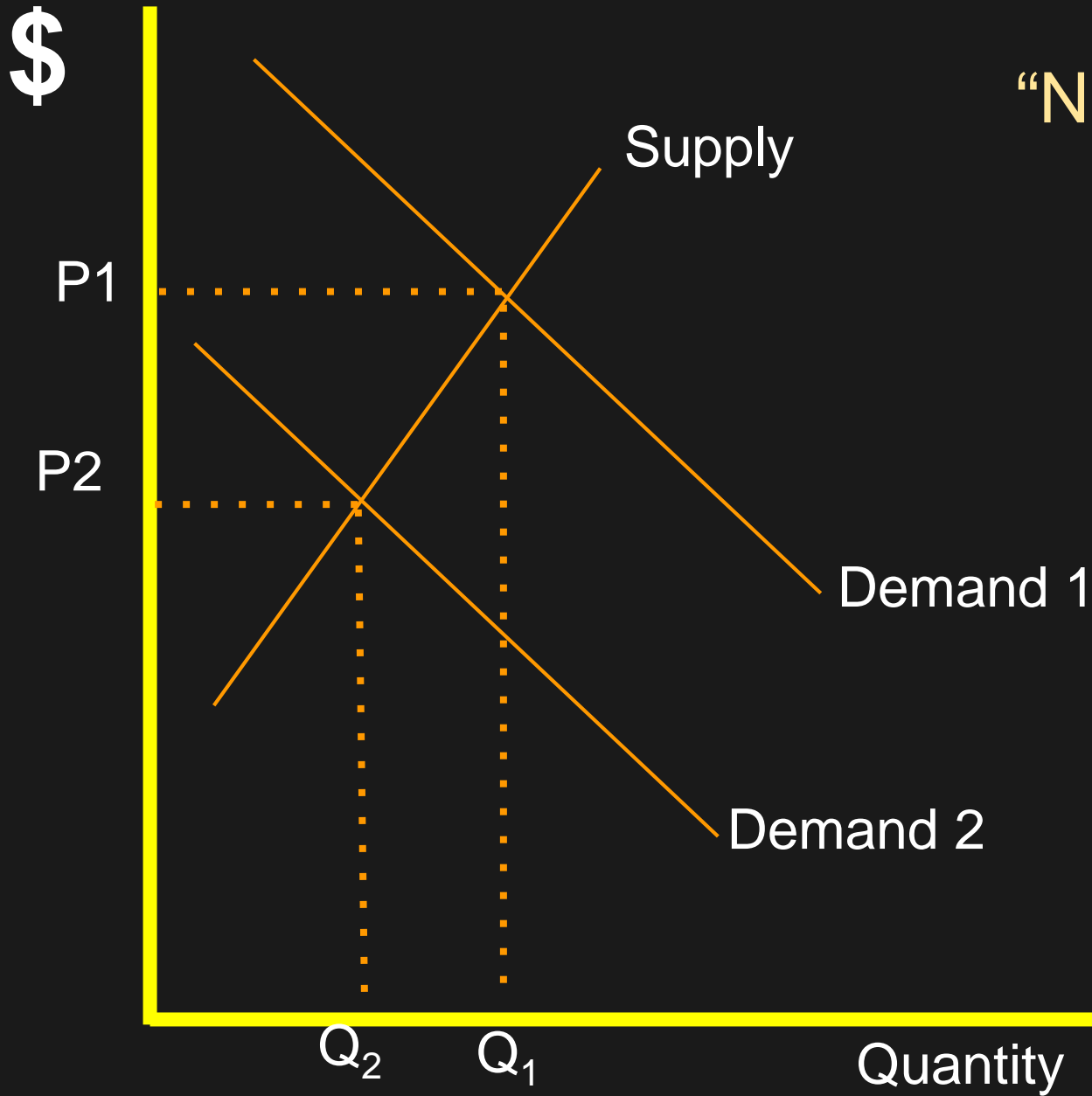
- ▶ Background
- ▶ Please grade each Recycling Stakeholder
- ▶ Collect & Tally



# What Mess?

- ▶ China was  $> 50\%$  of world demand for recyclables
- ▶ Now, China is  $< 25\%$  of world demand
- ▶ That's a demand shift!

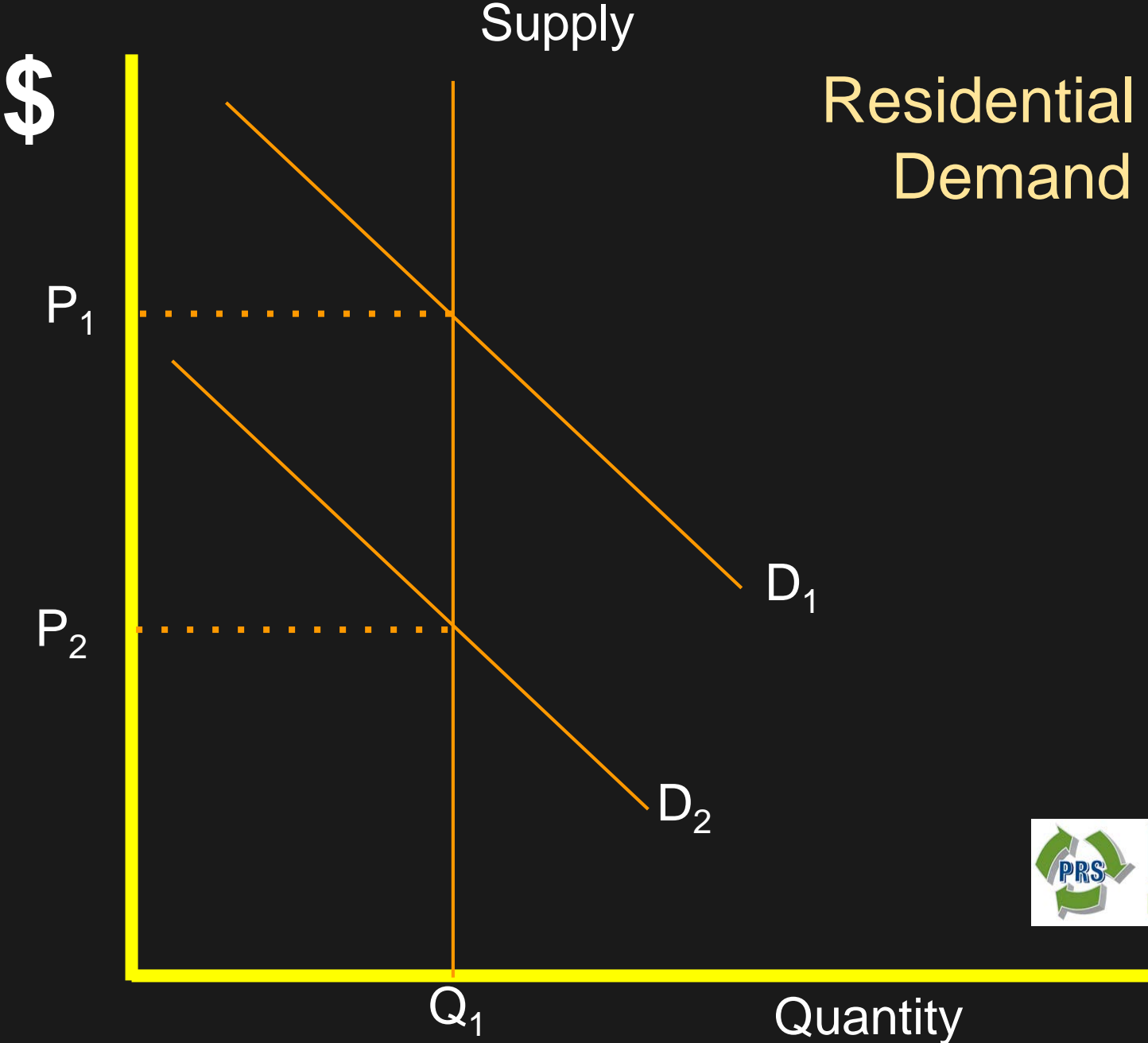




“Normal” Market



# Residential Market Demand Shift





# Vertical Supply Curve

- ▶ With an inelastic/vertical supply curve–
- ▶ Price volatility is the norm, stability is the exception!



# Why a Mess?

- ▶ Processors can't produce the quality of Paper China will buy
- ▶ ONP & OCC
  - .5% Contaminants
  - Zero Tolerance for
    - Milk Juice and Aseptic Cartons
    - Textiles
    - Medical Waste
    - Diapers



# Why a Mess?

- ▶ Chinese Cultural & Political Attitudes
  - Government is in charge, not the mills
    - U.S. Recyclables are for China “Imports of Solid Waste”
    - Chinese character for recyclable is the same as for solid waste
  - Public is upset about pollution of all types
    - “Solid Waste Imports” are an easy target



# Why a Mess?

- ▶ Incoming Stream Has Changed
  - Substantially Less Newspaper
  - More Small Cardboard
    - Amazon impact
  - More Misc. Plastics



# Why a Mess?

- ▶ Existing Mechanical Separation of Paper, Plastic & Metal is Not Perfect
  - Avg. Contamination of 5–10%



# What Can We Do About It?

- ▶ First & Foremost
  - Avoid denial & accept responsibility for change



# Avoid Denial How?

- ▶ Processors
- ▶ Haulers
- ▶ Municipalities
- ▶ Residents
- ▶ Manufacturers



# Avoid Denial How?

Stakeholder	Accept
Processors	Equipment is no longer adequate
Haulers	Part of the Quality Chain
Municipalities	Message Delivery Systems Not Working
Residents	Wishful Recycling is Not Recycling
Manufacturers	Some Packaging is Not Recyclable



# Where to Improve?

Stakeholder	Action
Processors	Invest in New Sorting Equipment
Haulers	Work with Cities to Develop Cart Feedback Programs
Municipalities	Simplify List of Acceptable Materials, Sponsor & Pay for Cart Feedback, Ban Plastic Bags
Residents	Sort Correctly
Manufacturers	Choose to part of the Solution

# What Does Econ Theory Tell Us About The Future?

- ▶ Assume:
  - Chinese Government will not back down
  - Every Action yields a reaction

# Processors

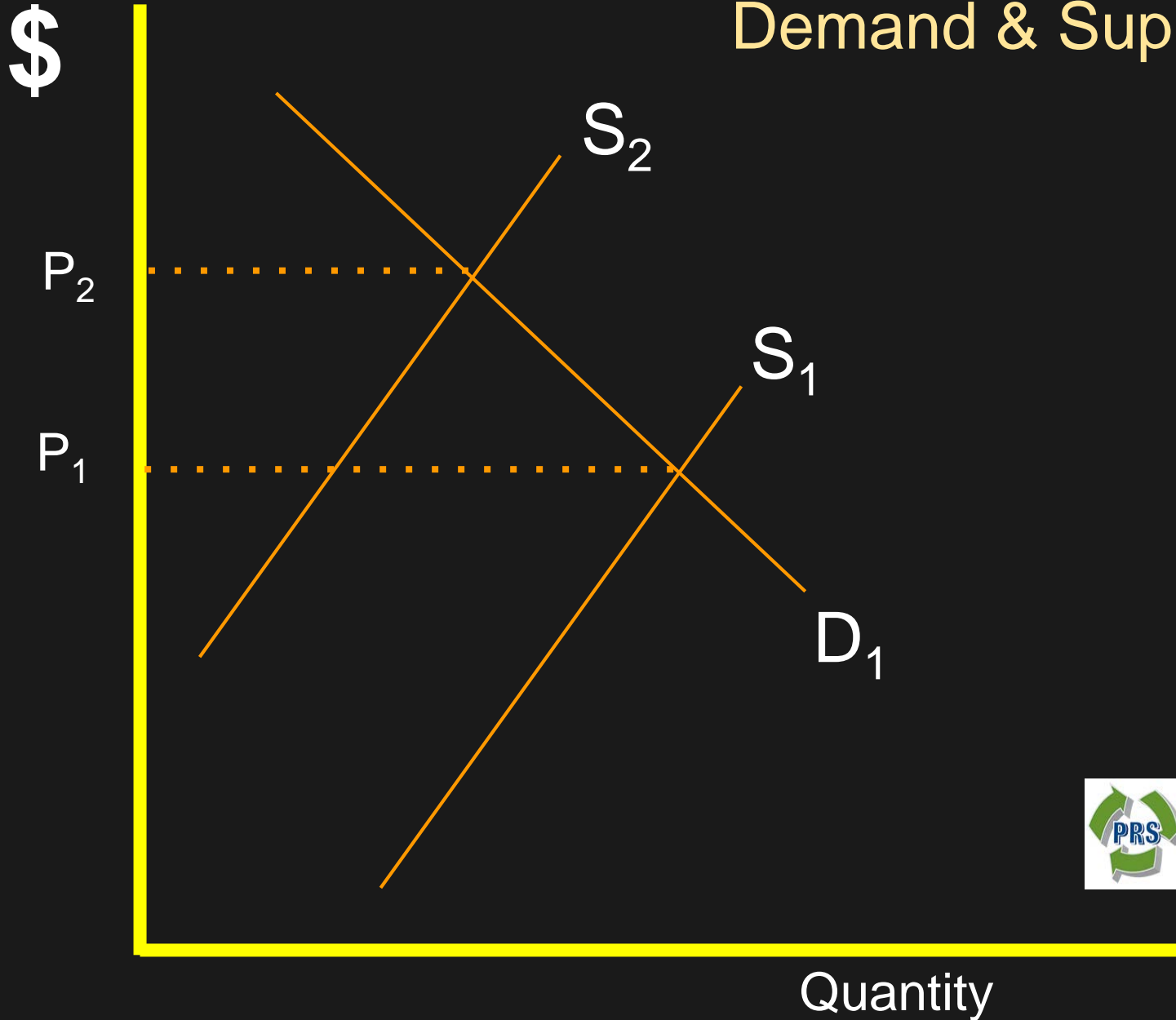
- ▶ Market Pricing/Incentives Will Guide Processors to Invest For Better Quality
  - Market Price Signal
    - ONP sells for + \$90/Ton
    - MIX sells for - \$25/Ton
    - Delta of \$115/Ton
  - This Price Incentive will encourage Processors to invest to make China ONP again
    - $-(\$115)(3000 \text{ Tons}) = \$345,000$  per month



# Paper Mills

- ▶ With Reduced Production from Chinese Mills (supply shift to the left) the price of rolls will increase around the world.

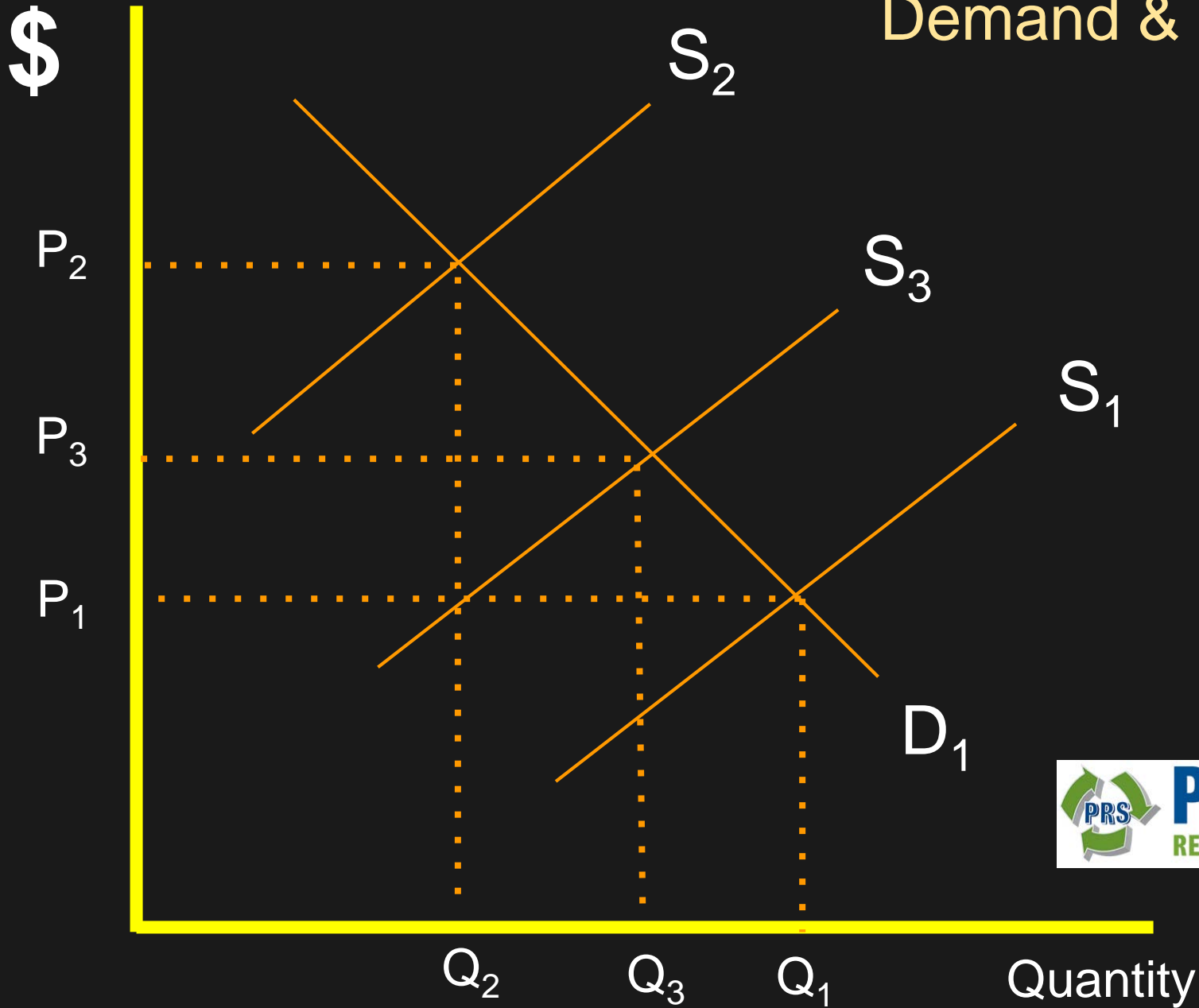
# Paper Roll Demand & Supply



# Paper Co.'s

- ▶ Higher Price for Rolls will encourage restarting paper machines that were “mothballed” and the construction of new paper mills in countries other than China.
- ▶ Existing Mills will Increase Production (Supply) to capture higher prices

# Paper Roll Demand & Supply



# Product Manufacturers

- ▶ Will Respond to Price Signal
  - Faced with Much higher packaging costs, manufacturers will substitute to available alternatives
  - Economists call this the “Substitution Effect”

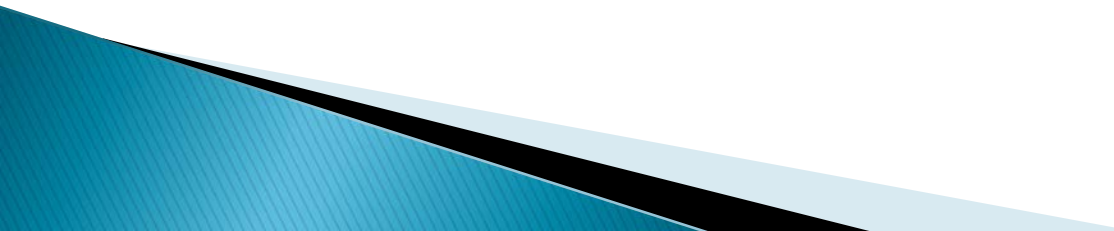




# Substitution Example

- ▶ Apple I-Phone Paper Jewelry Box \$1.50 ea..
- ▶ Substitute
  - Embed in Foam & Wrapped in Plastic \$.15 ea.
- ▶ Delta \$1.35 ea.
  
- ▶  $(\$1.35)(212,000,000 \text{ phones}) =$   
\$286,000,000

# Simultaneously

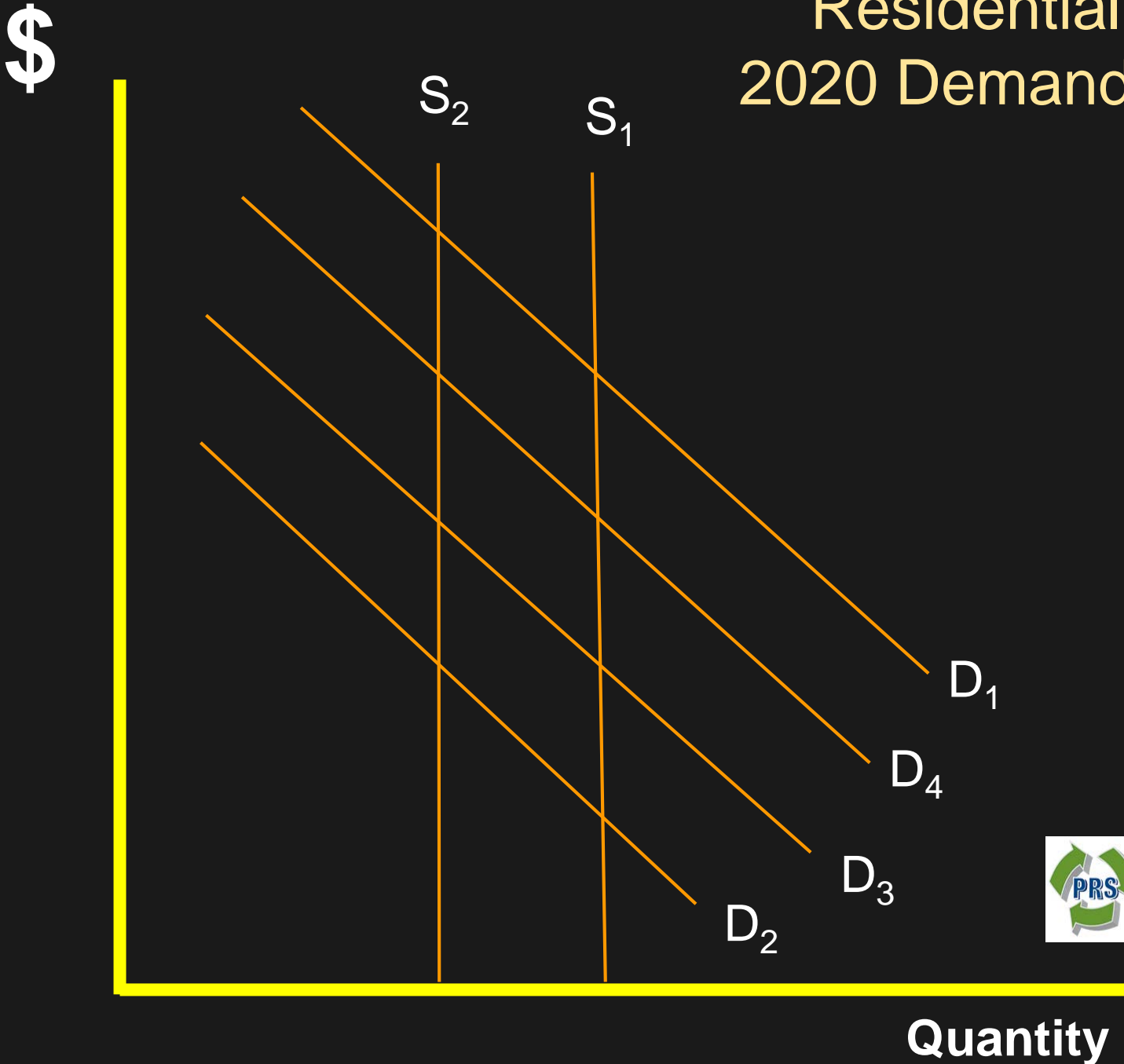
- ▶ 1. Processors will invest & increase supply to China
  - ▶ 2. Paper Co.'s will increase production from existing machines & bring new paper machines online increasing demand in countries other than China
  - ▶ 3. Product manufacturers will substitute materials
  - ▶ 4. And on and on until.....
- 

# Happy Day!

- ▶ The Market Finds a New Equilibrium
  - Where all the recyclable material generated can be sold at the market price



# Residential Market 2020 Demand & Supply



# Message to Decision Makers

- ▶ Of course pricing dropped like a rock! What did you expect?
- ▶ Markets are dynamic
- ▶ Pricing will improve, *ceteris paribus*, over the next 12–36 months



# Message to Decision Makers

- ▶ Recycling will survive
- ▶ Let's plan for improving our messaging to residents.
  - What we have been doing isn't working well enough
- ▶ Let's plan for a cart audit program
- ▶ Let's discuss simplifying our program material list



# Homework Assignments

- ▶ All Recycling Stakeholders Have Work To Do

Stakeholder	Homework Assignment
Processors	Invest in New Equipment
Municipalities	Simplify List, Pay for Cart Feedback, New messaging
Haulers	Help with Cart Feedback
Residents	Listen Carefully
Manufacturers	Avoid Making False Claims

# Pop Quiz

- ▶ What is the First Law of Economists?



# Pop Quiz Answer

- ▶ For Every Economist, There Exists an Equal and Opposite Economist

# Pop Quiz

- ▶ What is the Second Law of Economists?

# Pop Quiz

- ▶ They Are Both Wrong!

# Thank You

