

Transportation Studies

Question 2a: Postal Service Influence on the Price of Parcel Services

Presentation to
The Postal Regulatory Commission
Direct Communications Group and Analytic
Business Services

May, 2011



Study Questions

1. Does the Postal Service offer greater access to parcel and express transportation, money orders, and post office boxes than the private sector?
2. Do Postal Service prices establish a competitive baseline for other delivery services, money orders, and delivery box rentals constraining unfettered pricing?
3. Does the Postal Service offer competitive advantages to small and home-based business that would not exist without the services that they offer?
4. Does the Postal Service provide commercial customers with an economical means of shipping packages that would be more expensive if private sector carriers were used?



Question 2

Do Postal Service prices establish a competitive baseline for other delivery services constraining unfettered pricing?



Focus of Analysis for Question 2

- Published list prices of FedEx, UPS and USPS
- Why list prices?
 - Regular rate increases apply to list prices
 - Retail list prices are the prices paid by walk-up customers and UPS and FedEx retail customers that pay for services on line
 - Private sector carriers define retail customers as occasional shippers of parcels, generally households and small businesses with limited needs for parcel or express services.
 - Commercial list prices are basis for rates charged to larger customers
 - Private sector carriers require a minimum level of parcel shipping for a customer to use commercial rates
 - Discounts for larger commercial customers are off of these rates.



Questions Examined About List Rates

- Does the timing of rate increases suggest that one carrier or another may be a “price setter” and others are followers?
 - Does the history of price increases suggest that the Postal Service has constrained increases in list prices by FedEx or UPS?
- Do current list prices suggest that the Postal Service constrains prices paid by the lowest volume parcel shippers?
 - How are list prices among carriers similar and different?
 - Price analysis presented focuses on **retail** list prices



Examination of Historical Rate Increase Data

- Rate changes effective in 1998 through 2010
- Dates of both announcement of increase and implementation of increase
- Average rate changes for air and ground services
- Common rate surcharges



Timing of Rate Changes 1998 – 2004

	1998	1999	2000	2001	2002	2003	2004
Effective Increase Date							
UPS	2/7/1998	3/15/1999	2/7/2000	2/5/2001	1/7/2002	1/6/2003	1/5/2004
FedEx	2/15/1998	3/15/1999	2/1/2000	2/1/2001	1/7/2002	1/6/2003	1/5/2004
USPS		1/10/1999		7/1/2001	6/30/2002		
Announcement Date							
UPS Air	12/30/1997	12/29/1998	12/29/1999	12/28/2000	11/2/2001	11/8/2002	11/21/2003
FedEx Express	1/7/1998	2/8/1999	12/30/1999	12/27/2000	11/20/2001	11/20/2002	12/5/2003
UPS Ground	12/30/1997	12/29/1998	12/29/1999	12/28/2000	11/2/2001	11/8/2002	11/21/2003
FedEx Ground					11/20/2001	11/20/2002	12/5/2003
USPS Announces	7/11/1997	7/11/1997		1/12/2000	9/24/2001		
PRC Approves	5/11/1998	5/11/1998		4/10/2001	3/22/2002		

First Mover
 2nd Mover
 Last Mover



Timing of Rate Increases 2005 – 2010

	2005	2006	2007	2008	2009	2010
Effective Increase Date						
UPS	1/3/2005	1/2/2006	1/1/2007	12/31/08	1/5/2009	1/4/2010
FedEx	1/3/2005	1/2/2006	1/1/2007	1/7/2008	1/5/2009	1/4/2010
USPS		1/8/2006	5/14/2007	5/12/2008	1/18/2009	1/4/2010
Announcement Date						
UPS Air	11/6/2004	11/18/2005	11/18/2006	11/9/2007	10/19/2008	11/20/2009
FedEx Express	11/5/2004	10/5/2005	11/3/2006	10/26/2007	9/18/2008	9/17/2009
UPS Ground	10/29/2004	11/18/2005	11/18/2006	11/9/2007	10/19/2008	11/20/2009
FedEx Ground	11/5/2004	12/2/2005	12/3/2006	11/30/2007	11/14/2008	12/3/2009
USPS Announces		4/8/2005	5/3/2006	11/30/2007	11/14/2008	11/4/2009
PRC Approves		11/1/2005	3/14/2007	2/11/2008		



First Mover



2nd Mover



Last Mover



Analysis of Rate Change History

- Before PAEA, USPS rate changes were announced months earlier; afterwards, USPS announced changes last
- Until 2004...
 - UPS announced its rate changes first for both Air and Ground services and
 - FedEx followed
- Starting in 2005...
 - FedEx announced FedEx Express increase and UPS announcement of UPS Air increases followed
 - UPS announced UPS Ground rate increase and FedEx Ground's announcement followed.



Analysis of Rate Change History (cont'd)

- USPS rate increases have had no impact on timing of UPS or FedEx rate increases
- Current order of announcing rate changes reflects market share order
 - FedEx Express, the largest overnight and two-day air carrier, announces first.
 - UPS, the largest ground parcel carrier, announces first.



Summary: Price Leaders and Followers

- Rate changes generally follow the leader
 - UPS Air and FedEx Express rate changes
 - UPS and FedEx ground rate changes
 - Air / ground residential surcharge changes
 - Delivery area surcharges for commercial addresses
 - Delivery area surcharges for residential addresses



How Similar Were Rate Changes?

- Rate changes set by FedEx Express and UPS Air Services have been identical since 2008
 - Some of the differences reflect differences in fuel surcharges (often larger rate increase means a lower fuel surcharge)
- Rate changes set by FedEx Ground and UPS Ground services have been identical in all years but one since 2000
- USPS rate changes until PAEA were lumpy and it is unclear how they affected changes at UPS or FedEx
- After PAEA, USPS rates set after UPS and FedEx announced changes – appears that they could have little impact



UPS Air and FedEx Express Rate Changes

	1998	1999	2000	2001	2002	2003	2004
UPS Air	3.3%	2.5%	3.5%	3.7%	4.0%	3.2%	2.9%
FedEx Express	3.5%	2.8%	0.0%	4.9%	3.5%	3.5%	2.5%
USPS Express		8.1%		3.8%	9.4%		
USPS Priority		5.6%		16.0%	13.5%		
	2005	2006	2007	2008	2009	2010	
UPS Air	2.9%	5.5%	4.9%	6.9%	6.9%	5.9%	
FedEx Express	4.6%	5.5%	6.9%	6.9%	6.9%	5.9%	
USPS Express		5.4%	12.5%	3.1%	5.0%	?	
USPS Priority		5.4%	13.6%	4.0%	5.0%	3.3%	



UPS and FedEx Ground Rate Changes

	1998	1999	2000	2001	2002	2003	2004
UPS Ground	3.6%	2.5%	3.1%	3.1%	3.5%	3.9%	1.9%
FedEx Ground	3.7%	2.3%	3.1%	3.1%	3.5%	3.9%	1.9%
USPS Parcel Post		12.4%		2.7%	6.4%		

	2005	2006	2007	2008	2009	2010
UPS Ground	2.9%	3.9%	4.9%	5.9%	5.9%	4.9%
FedEx Ground	N/A	3.9%	4.9%	5.9%	5.9%	4.9%
USPS Parcel Post		7.1%	15.9%	3.3%	4.6%	



UPS and FedEx Minimum Ground Delivery Charge (1 lb. Zone 2)

	1998	1999	2000	2001	2002	2003	2004
UPS	n/a	n/a	\$3.02	\$3.11	\$3.23	\$3.39	\$3.45
FedEx	n/a	n/a	\$3.02	\$3.11	\$3.23	\$3.39	\$3.45

	2005	2006	2007	2008	2009	2010
UPS	\$3.62	\$3.80	\$4.00	\$4.20	\$4.57	\$4.84
FedEx	\$3.62	\$3.80	\$4.00	\$4.20	\$4.57	\$4.84

Note: The minimum charge is the lowest rate charged no matter how large the discount offered by UPS or FedEx.



Application of Dimensional Weight by UPS and FedEx

	1998	1999	2000	2001	2002	2003	2004
UPS	Air Only	Air Only	Air Only	Air Only	Air Only	Air Only	Air Only
FedEx	Air Only	Air Only	Air Only	Air Only	Air Only	Air Only	Air Only

	2005	2006	2007	2008	2009	2010
UPS	Air Only	Air Only	Air Only	Air and Ground	Air and Ground	Air and Ground
FedEx	Air Only	Air Only	Air Only	Air and Ground	Air and Ground	Air and Ground



The cumulative effect: UPS and FedEx have matched each other – not USPS

Service	Cumulative From 1998 Through 2009	Cumulative From 1998 Through 2010
Air Services		
UPS Air	166.45 %	177.93 %
FedEx Express	165.21 %	174.96 %
Express Mail	157.57 %	
Priority Mail	181.79 %	187.78 %
Ground Services		
UPS Ground	155.57 %	163.19 %
FedEx Ground	151.04 %	158.44 %
USPS Parcel Post	164.66 %	164.66 %
USPS Priority Mail	181.79 %	187.78 %



How Similar are Surcharges and Accessorial Charges?

- Introduction of surcharges and accessorial charges by first mover quickly followed by other private sector carrier
- Size of accessorial charges and surcharges of first mover matched within a year and are now identical or nearly identical
 - Exception – FedEx Ground residential surcharges is set identical to FedEx Express and UPS Air residential surcharge and not UPS Ground residential surcharge
 - FedEx Home Delivery residential surcharge set equal to UPS Ground residential surcharge



Ground Residential Surcharge Changes

	1998	1999	2000	2001	2002	2003	2004
UPS Ground	\$1.00	\$1.00	\$1.00	\$1.05	\$1.10	\$1.15	\$1.40
FedEx Ground	n/a	n/a	\$1.25	\$1.30	\$1.35	\$1.40	\$1.75
FedEx Home	n/a	n/a	\$1.00	\$1.05	\$1.10	\$1.15	\$1.40
UPS Air	n/a	n/a	n/a	n/a	\$1.10	\$1.15	\$1.40
FedEx Express	n/a	n/a	n/a	n/a	\$1.35	\$1.40	\$1.75
	2005	2006	2007	2008	2009	2010	
UPS Ground	\$1.50	\$1.75	\$1.85	\$1.95	\$2.05	\$2.20	
FedEx Ground	\$2.00	\$2.10	\$2.20	\$2.30	\$2.40	\$2.50	
FedEx Home	\$1.50	\$1.75	\$1.85	\$1.95	\$2.05	\$2.20	
UPS Air	\$1.75	\$2.10	\$2.20	\$2.30	\$2.40	\$2.50	
FedEx Express	\$2.00	\$2.10	\$2.20	\$2.30	\$2.40	\$2.50	



Delivery Area Surcharges for Residential Addresses

	1998	1999	2000	2001	2002	2003	2004
UPS	n/a	unknown	\$1.50	\$1.50	\$1.50	\$1.50	\$1.75
FedEx	n/a	n/a	\$1.50	\$1.50	\$1.50	\$1.50	\$1.75

	2005	2006	2007	2008	2009	2010
UPS	\$2.00	\$2.10	\$2.20	\$2.30	\$2.40	\$2.50
FedEx	\$2.00	\$2.10	\$2.20	\$2.30	\$2.40	\$2.50



Delivery Area Surcharges for Commercial Addresses

	1998	1999	2000	2001	2002	2003	2004
UPS Ground	n/a	n/a	n/a	n/a	n/a	n/a	\$1.25
FedEx Ground	n/a	n/a	\$1.50	\$1.50	\$1.50	\$1.50	\$1.75
UPS Air	n/a	n/a	n/a	n/a	n/a	n/a	\$1.25
FedEx Express	n/a	n/a	n/a	n/a	\$1.50	\$1.75	\$1.25
	2005	2006	2007	2008	2009	2010	
UPS Ground	\$1.25	\$1.30	\$1.40	\$1.50	\$1.60	\$1.70	
FedEx Ground	\$2.00	\$2.10	\$1.40	\$1.50	\$1.60	\$1.70	
UPS Air	\$1.25	\$1.30	\$1.40	\$1.50	\$1.60	\$1.70	
FedEx Express	\$1.25	\$1.30	\$1.40	\$1.50	\$1.60	\$1.70	



Implications of the Rate History Analysis

- Overall, it would appear that UPS and FedEx are more focused on each other than they are on USPS rate changes
- Since PAEA, the Postal Service appears to be a price follower in setting its rates for shipping services
 - Smaller rate increases may reflect a need to catch-up with prices charged by private sector
 - Rate changes in single-piece parcel post appear to track both historical increases and estimation of future rate increases – impact of these rates depends on size of single-piece parcel market
- Comparison of Priority Mail increases difficult as it often competes with UPS Ground and FedEx Ground



Examination of List Prices

- Identify product prices to be compared
- Review how prices are constructed
 - Origin – Destination Zone set
 - Weight of parcel determined
- Analysis of list rates
- Limitations of Analysis
 - Only analyzed rates charged in continental United States
 - Did not separately examine impact of surcharges



Private Sector Carriers Have Two Sets of List Rates

- Retail Rates
 - Rates charged to very low volume shippers of parcels and express items
 - UPS and FedEx charge identical rates for those that pay on-line or pay in person
- Commercial Rates
 - Rates charged to small but regular customers of UPS or FedEx
 - Basis for discounts granted to or negotiated with larger shippers.
- Pricing analysis focuses on retail list rates
 - Impact of commercial rates discussed in later sections



Retail and Commercial List Prices of the Following Products Examined

	Carrier		
	FedEx	United Parcel Service	United States Postal Service
Overnight	Priority Overnight	UPS Next Day Air	Express Mail
2 – Day	FedEx Ground or FedEx 2–Day Air depending on distance	UPS Ground or UPS 2–Day Air depending on distance	Priority Mail
Ground (least expensive)	FedEx Ground	UPS Ground	Parcel Post

Note: FedEx Ground and UPS Ground competes with either Priority Mail or Parcel Post depending on the origin – destination distance.



Construction of Retail and Commercial List Rates

- Process identical for all carriers
- Individual steps for each level of service (express, 2-day, and ground)
 1. Determine zone of origin – destination pair (a rough estimation of origin – destination distance)
 2. Determine shipment weight (as adjusted for box dimensions)
 3. Find base rate for zone and shipment weight
 4. Determine fuel-surcharge adjusted base rate for carriers that charge a fuel surcharge (defined here as list rate)
 5. Add delivery location and residential address surcharge for carriers that charge these surcharges (defined as the fully loaded rate)



Analysis of Carrier Zones

- Nearly identical for all carriers for all origin – destination pairs examined
- Identical in both directions for each carrier
 - Zones appear to reflect primarily great circle mile distance
 - Same zone for shipments going from A to B and from B to A (i.e. no front-haul / back-haul differential)
- Nearly identical zones for same distance regardless of whether origin, destination or both are in an urban or rural location



Implications of Analysis of Carrier Zones

- Rate differences between carriers reflect only differences in list rates for each zone
- No need to look at rates between specific origin – destination pairs as differences in list rates reflect all differences in rates charged
- List rates are identical for shipments regardless of whether urban or rural
 - Private sector carriers adjust rates to reflect their costs by adding
 - Rural, remote, and home delivery surcharges
 - Pick-up surcharges in rural locations where retail outlets are scarce
 - Smaller discounts to large shippers in rural/remote locations

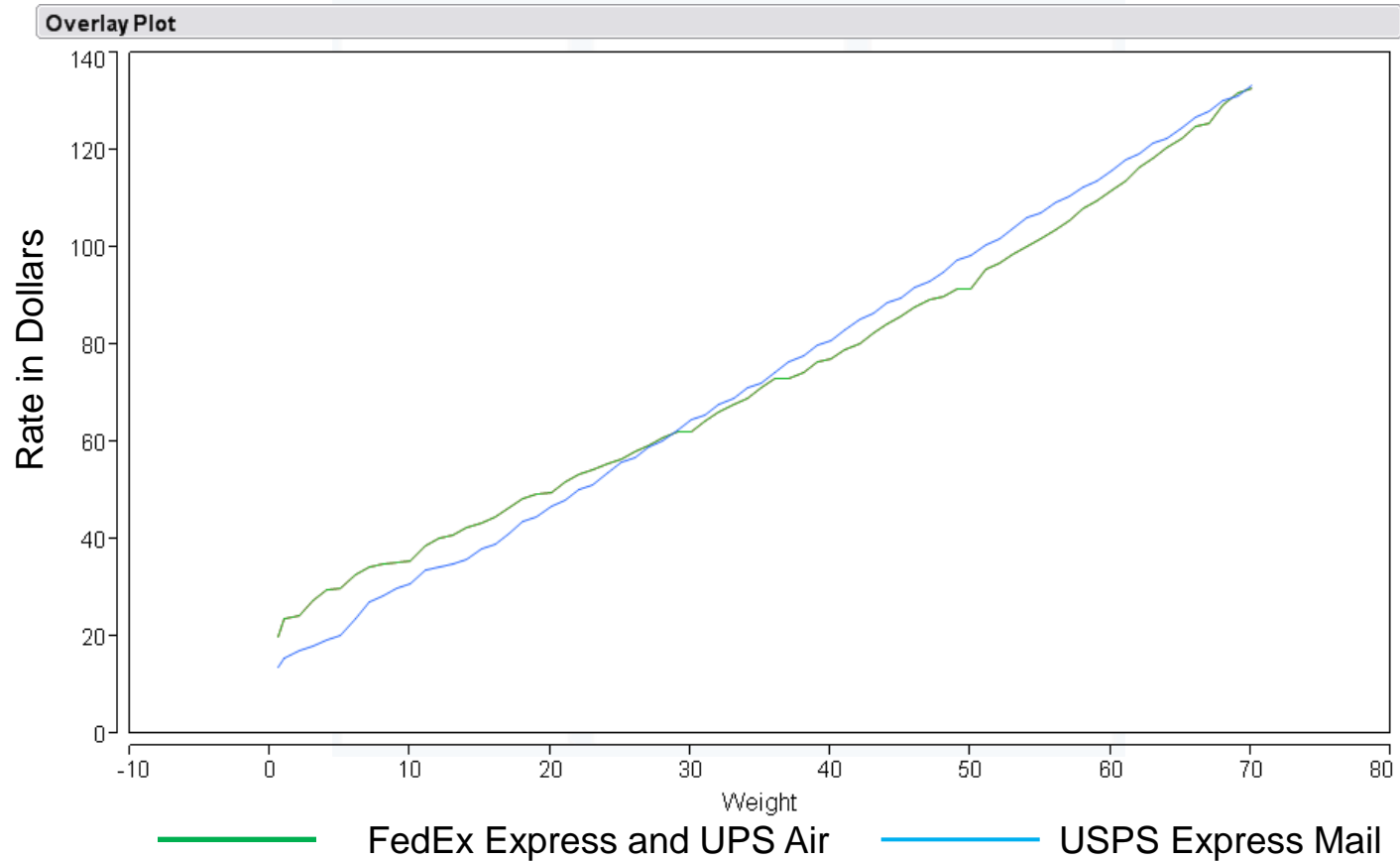


Comparison of Retail Overnight Rates

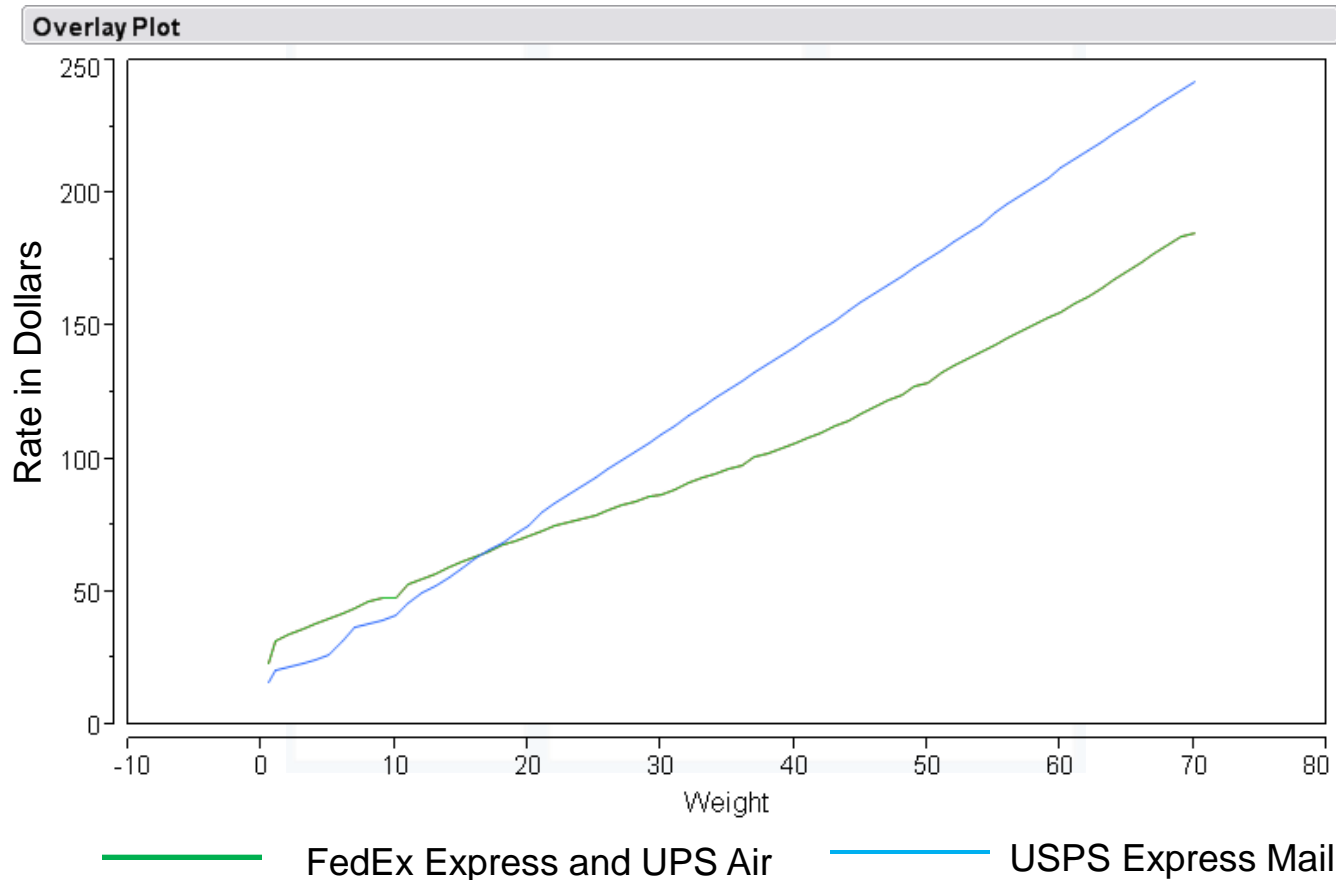
- Five sets of rates compared
 - USPS Express Mail rates
 - UPS Air retail
 - FedEx Express retail
- Separate comparisons conducted for each zone
- Following charts show only two different rates per zone as UPS Air and FedEx retail rates are identical



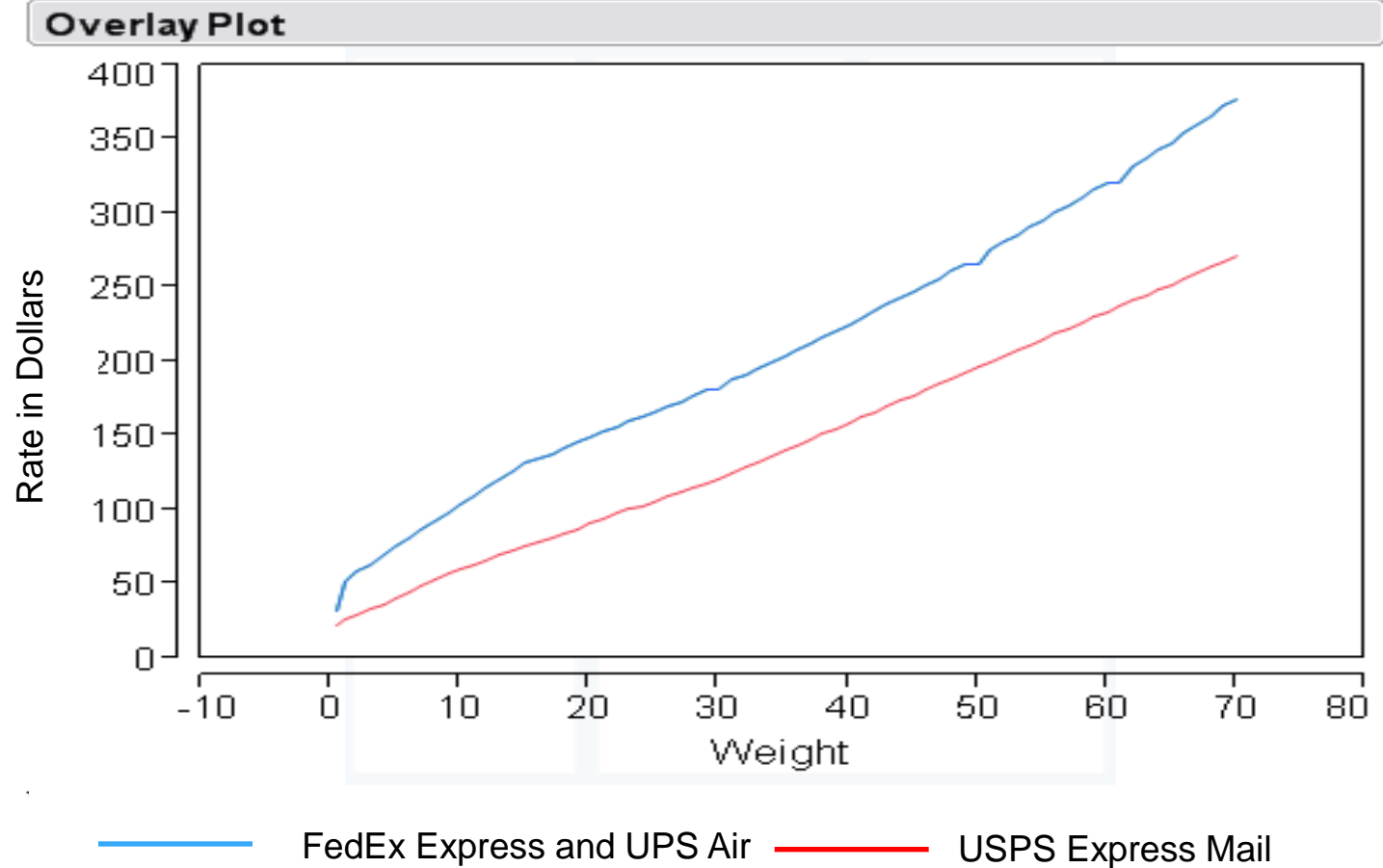
USPS Zone 2 Express Rates Lower Under 30 Pounds



USPS Zone 3 Express Mail Rates Lower Under 20 Pounds

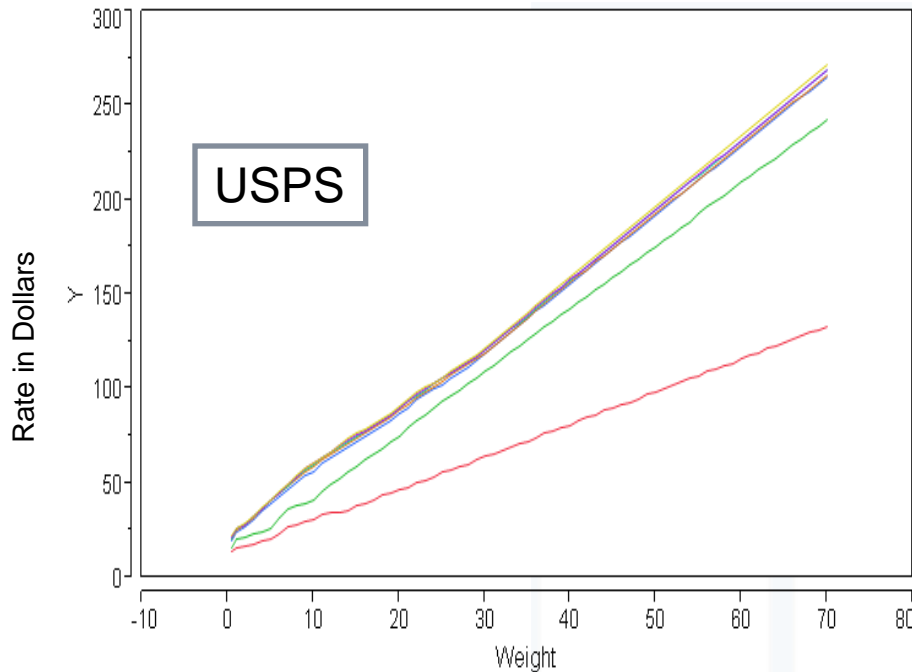


Zone 8 Express: USPS as Much as 50% Cheaper



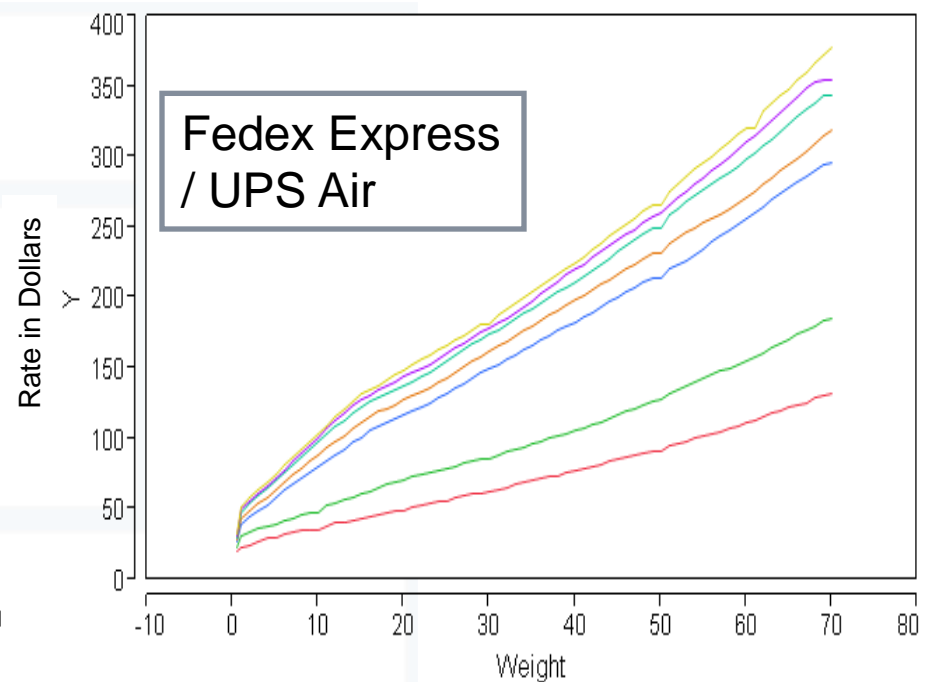
USPS and FedEx/UPS Have Different Cost of Distance Models Underlying Rates

Overlay Plot



Y — FS.Z1.2 USPS_express — FS.Z3 USPS_express — FS.Z4 USPS_express — FS.Z5 USPS_express
 — FS.Z6 USPS_express — FS.Z7 USPS_express — FS.Z8 USPS_express

Overlay Plot



Y — FS.Z1.2 FedEx_Retail_express — FS.Z3 FedEx_Retail_express
 — FS.Z4 FedEx_Retail_express — FS.Z5 FedEx_Retail_express
 — FS.Z6 FedEx_Retail_express — FS.Z7 FedEx_Retail_express
 — FS.Z8 FedEx_Retail_express



Comparison of Rates for Overnight Services

- UPS Air and FedEx Retail Rates are identical
- The relationship between UPS and FedEx rates and USPS rates depends on the zone.
 - USPS appears to have a different approach to relating distance and weight related costs to prices than competitors
- UPS appears more interested in matching FedEx than USPS
- Difficult to see that the USPS has any influence on overnight delivery rates

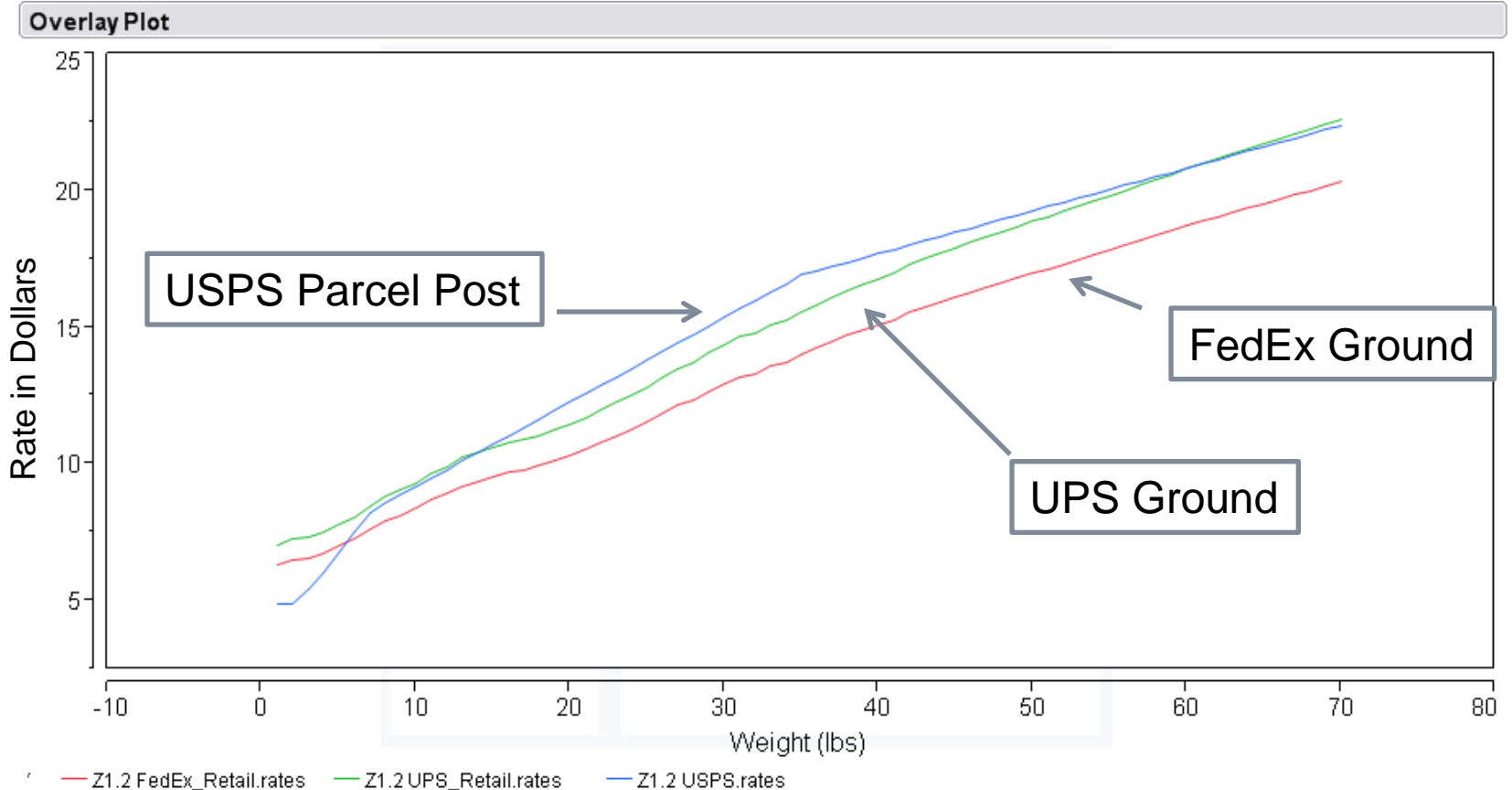


Comparison of Parcel Rates (Slowest Service Offered)

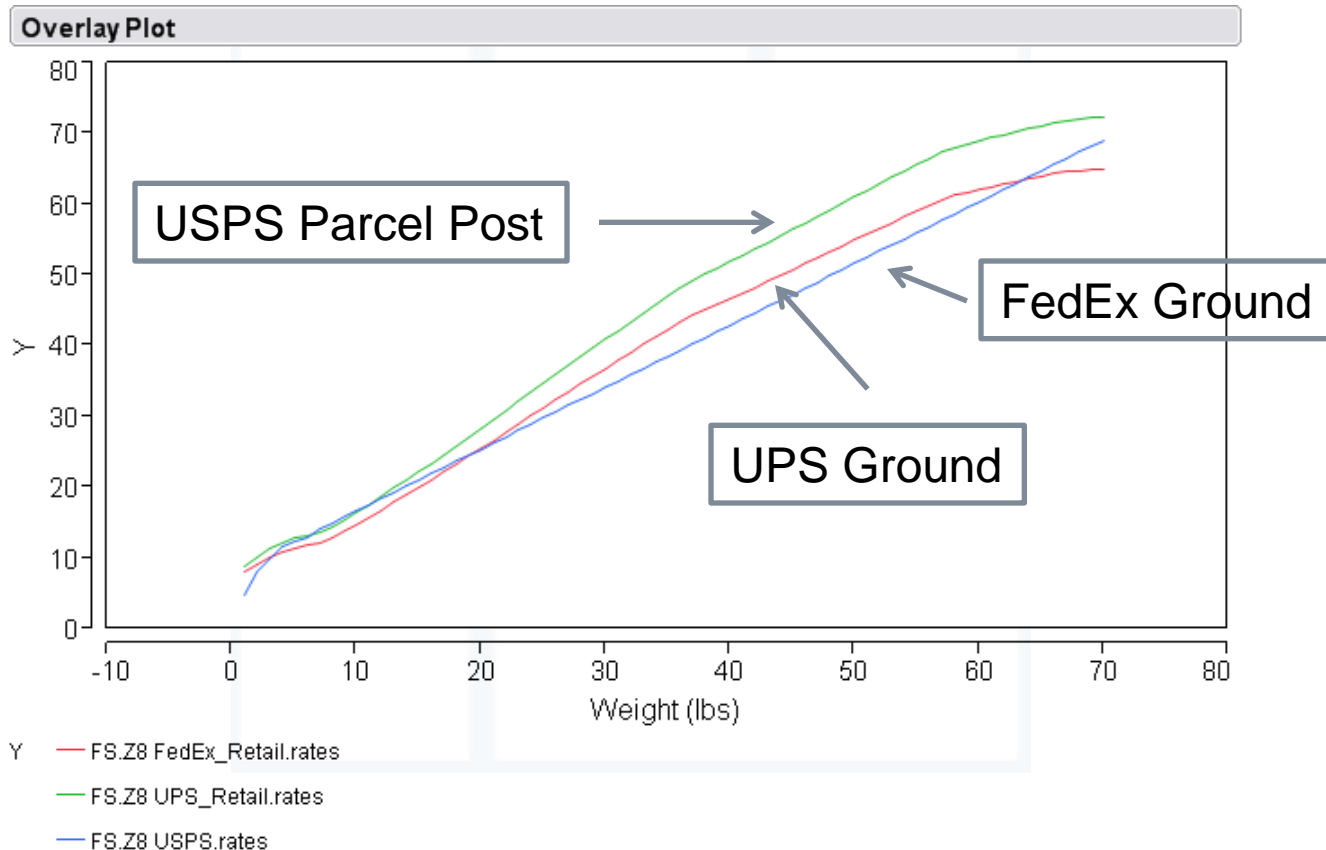
- Comparison of rate structure
 - USPS Parcel Post
 - FedEx Ground retail rates
 - UPS Ground retail rates
- Complexity of structure illustrated for two zones
 - Zone 2
 - Zone 8



Zone 2 Parcel Rates Illustrate Lower USPS Rates for Light Weight Parcels



Zone 8 Parcel Rates Illustrate a Complicated Rate Comparison



Conclusions of Price Comparison for Parcel Services

- USPS rate is lowest for zone 2 up to about 5 lbs, but then exceeds FedEx.
- Beyond 15 lbs, USPS becomes the most expensive product compared to all competitors
- For Zone 8, USPS is the price leader up to 5 lbs, at 10 lbs, it is the most expensive and then after about 22 lbs it becomes the cheapest again
- UPS and FedEx appear more interested in each other's ground parcel prices than they are in Parcel Post prices



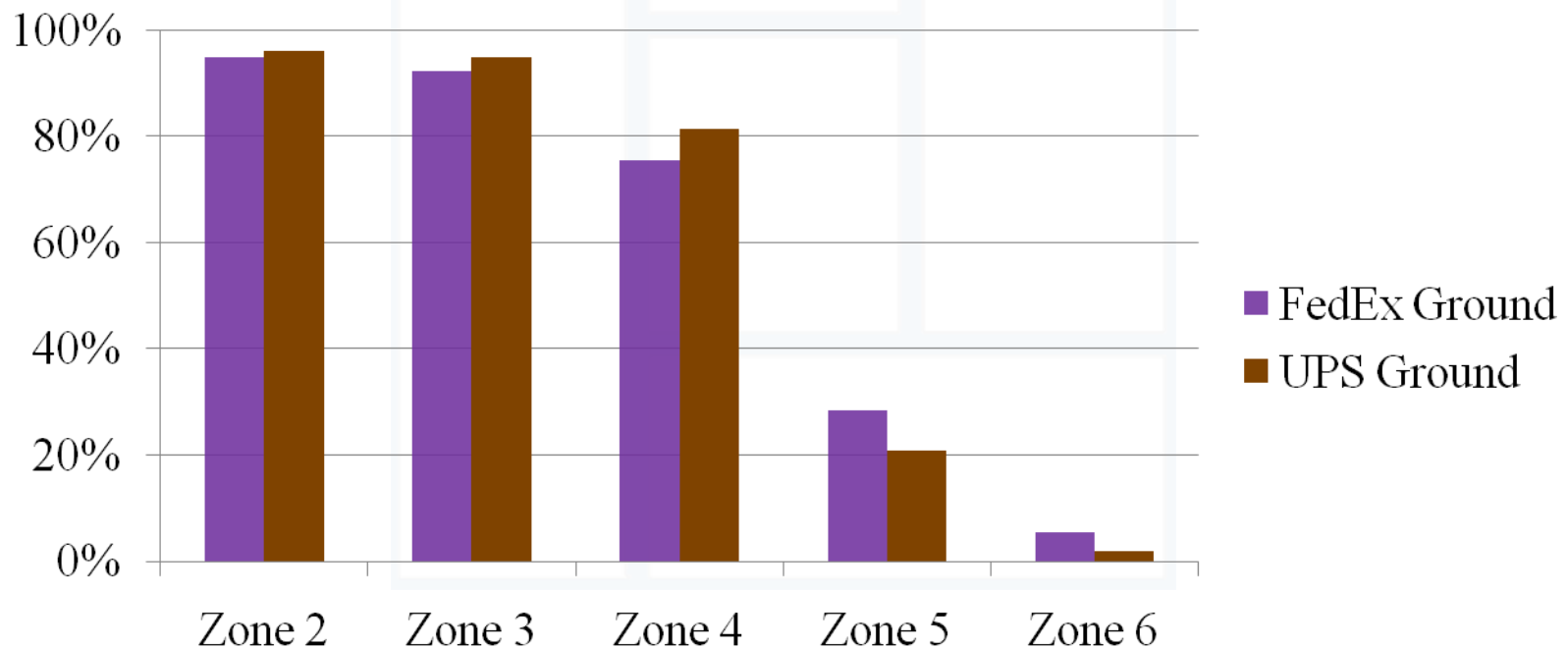
Comparison of 2-Day Service

- Comparison is complicated as Priority Mail does not compete with the same product in each zone
- Analysis uses a blended rate for each zone depending on the proportion of a sample of origin-destination pairs that UPS Ground and FedEx Ground deliver in 2 days
 - Some O – D pairs are 2-day for FedEx Ground and not UPS Ground and vice versa;
 - In sample UPS has more 2-day ground delivery O – D pairs
- UPS Ground and FedEx are assumed to take longer than 2 days for O – D pairs in zones 7 and 8



Proportion of O – D Pairs with 2-Day Ground Service From FedEx or UPS

Proportion of Origin Destination Pairs with Delivery Standard of 2-days or Less



Implications of UPS and FedEx Ground Service

- In zones 2 and 3, UPS and FedEx Ground is competitive with Priority Mail for nearly all origin – destination pairs
 - UPS and FedEx Ground prices usually are the competitive prices
- For origin-destinations in zone 4, UPS Ground and FedEx Ground service is competitive with 2 day Priority Mail for at least 75% of origin-destination pairs.
- If Priority Mail 2-day or 3-day service commitment was known, then UPS Ground and FedEx Ground would be competitive with more origin – destination pairs

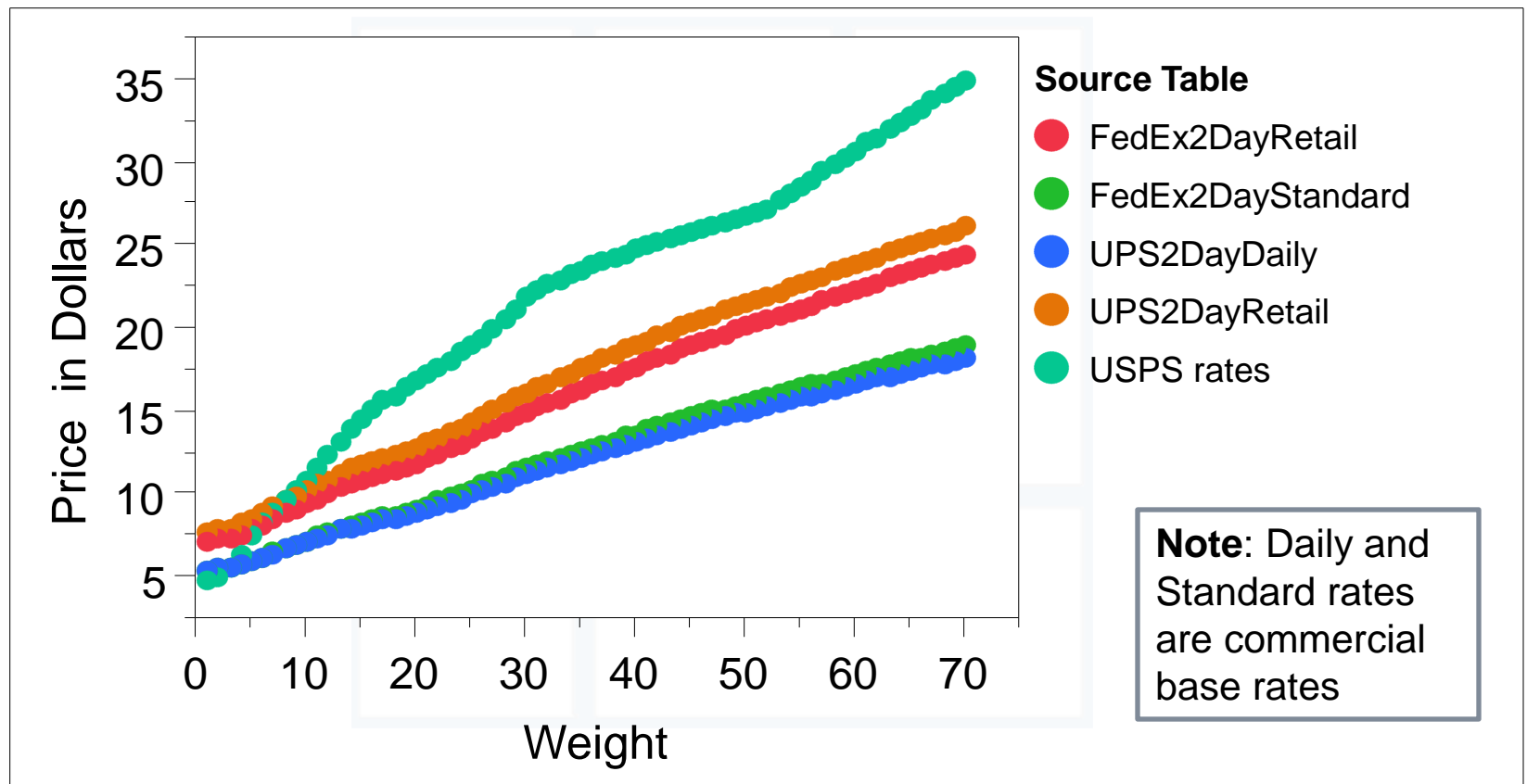


Blended Rate Charts

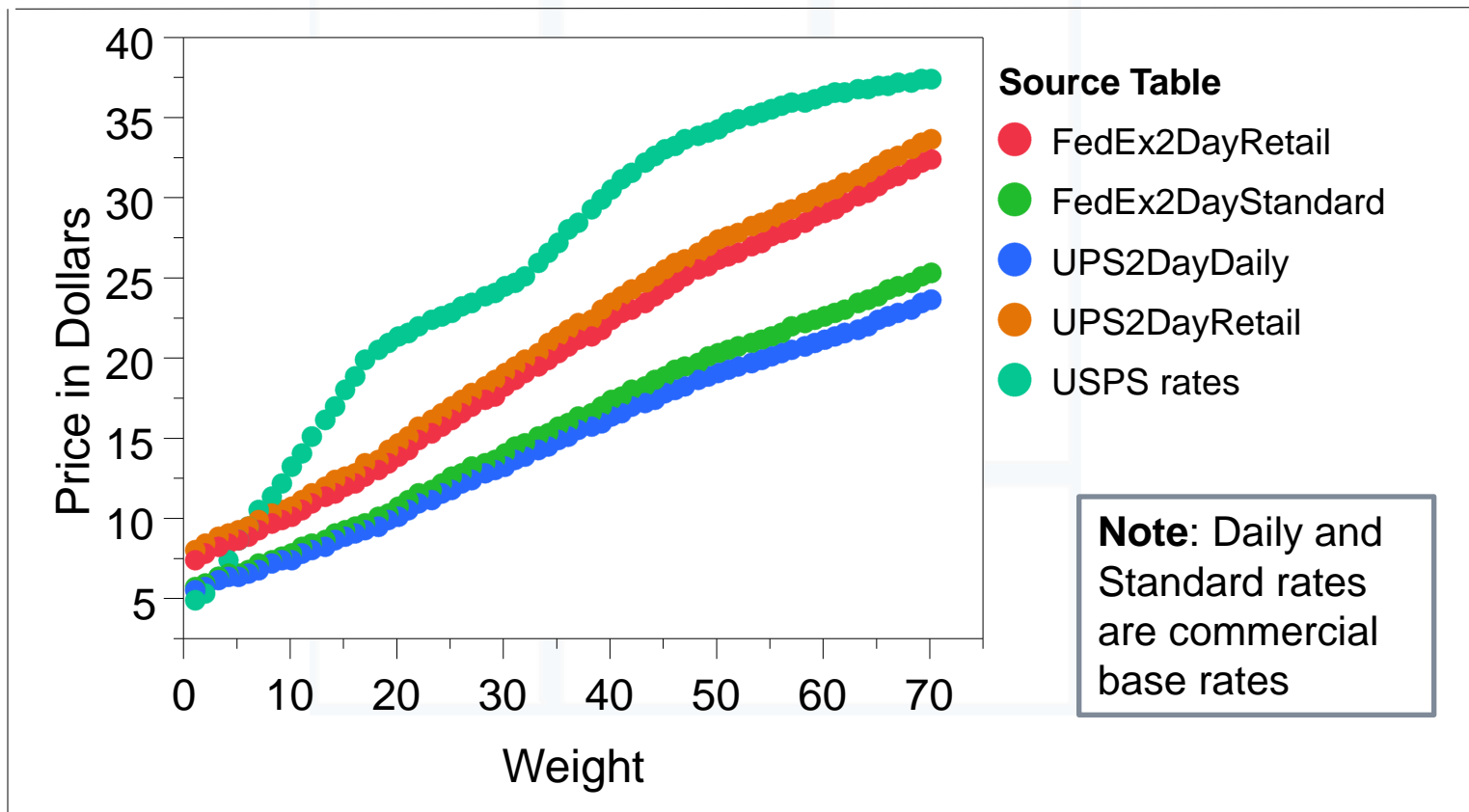
- Include both Retail and Commercial Rates
 - Focus on retail rates
 - UPS calls its commercial rates “daily rates”
- Rate charts shown
 - Zone 2
 - Zone 3
 - Zone 4
 - Zone 6 (graphs for zones 7 and 8 are similar)



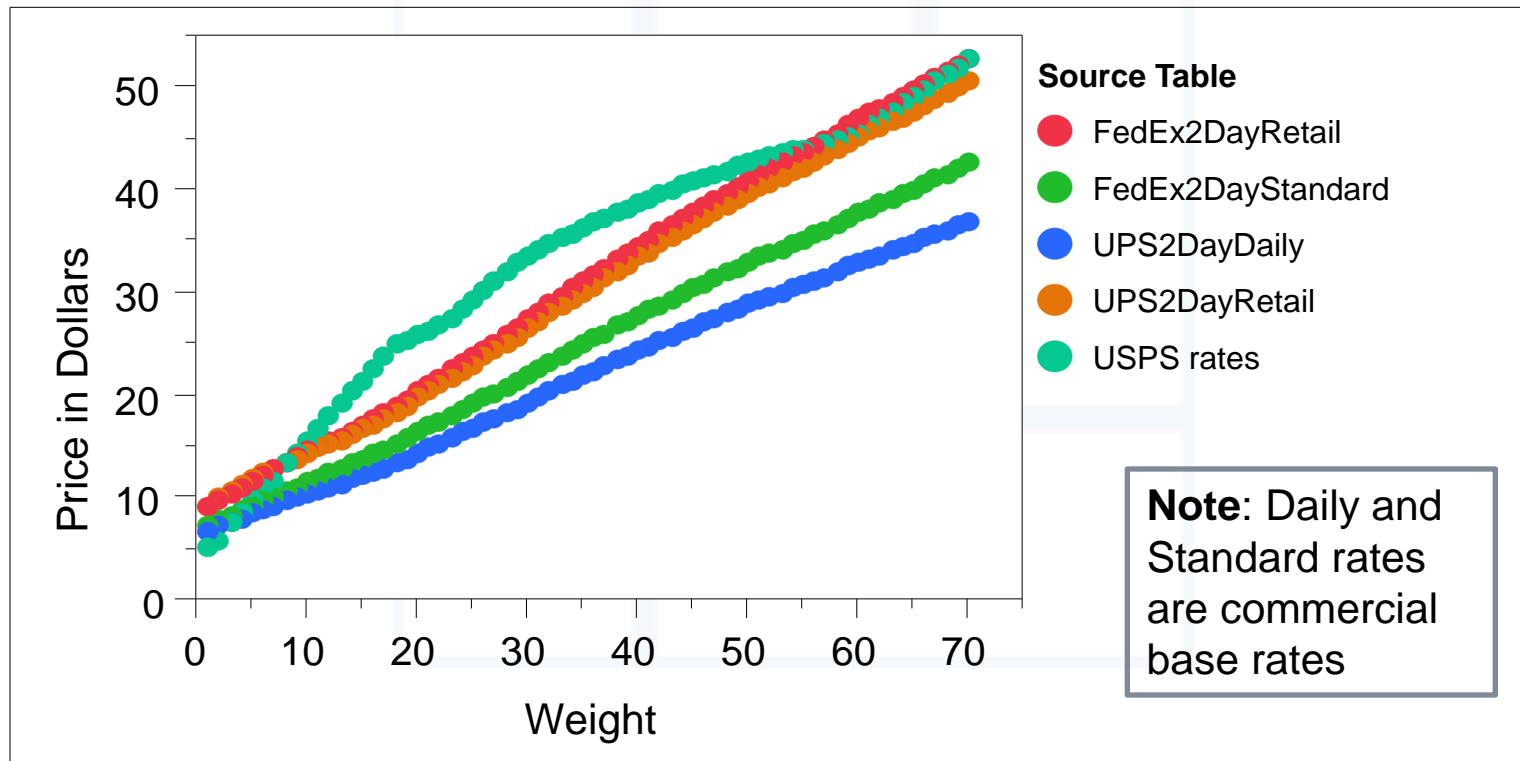
Zone 2 Blended Rates Show USPS Rates Higher Above 10 Pounds



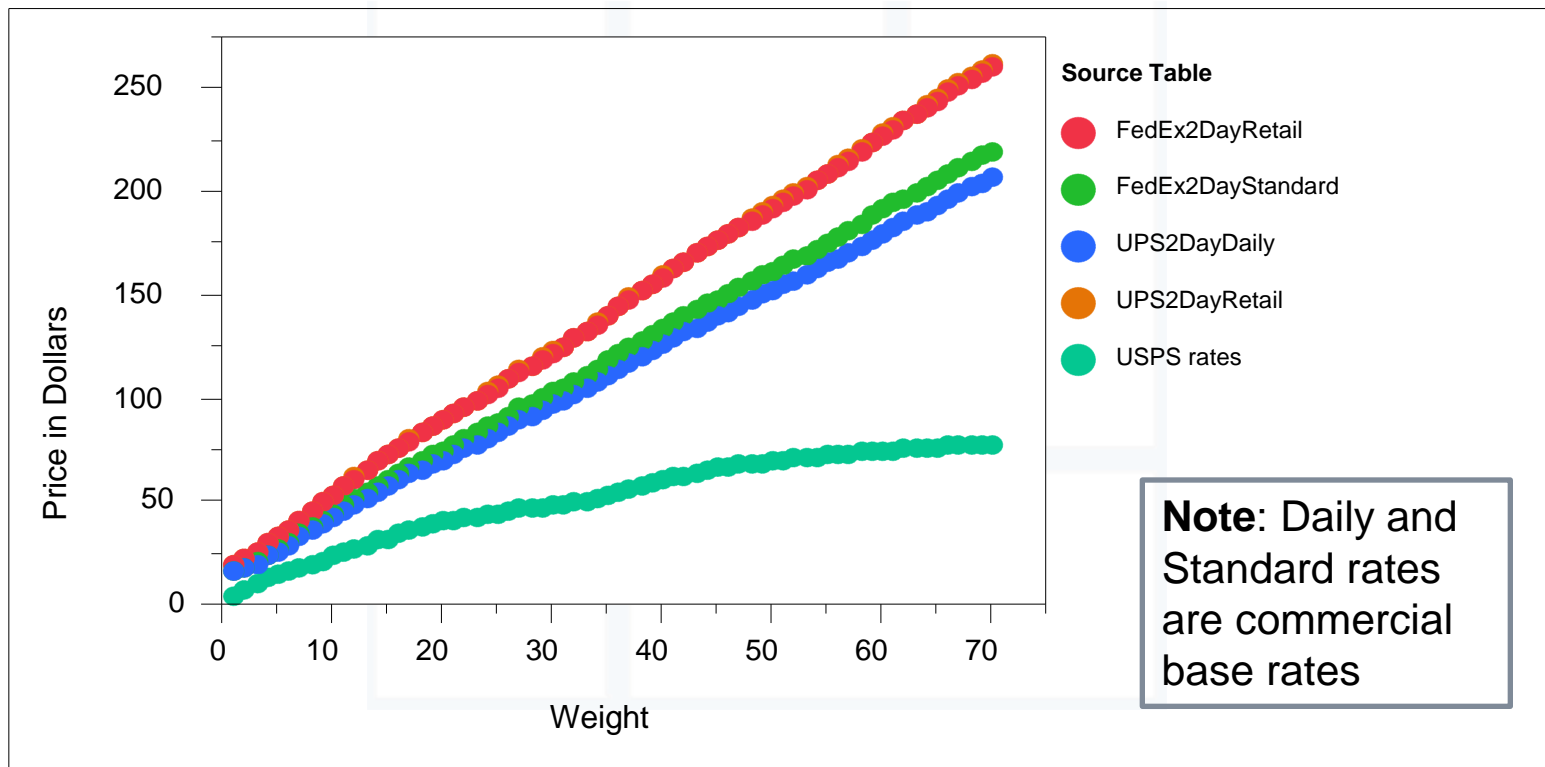
Zone 3 Blended Rates Show USPS Rates Higher Above 8 Pounds



Zone 4 Rates Show USPS Prices Using a Different Weight Cost to Price Model



Zone 6 Rates Show Switch to Rate Comparison with UPS/FedEx 2-Day Air



Conclusions: Price Comparisons with Priority Mail

- Priority Mail rates above 8 – 10 pounds for zones 2, 3, and 4 do not reflect the fact they compete with UPS Ground and FedEx Ground
- Neither UPS or FedEx appear to have any interest in having their retail rates for 2-day Air service match Priority Mail rates below 5 pounds
 - Even commercial list rates are higher than Priority Mail below 2 pounds for zones 2, 3, and 4
- For zones 6 and above, UPS and FedEx appear to ignore Priority Mail rates when setting 2-day air rates



Overall Evaluation of USPS's Impact on Rates of FedEx and UPS Rates

- USPS sets rates for its products after UPS and FedEx announce rate changes
 - Timing limits possible USPS influence until the following year
 - Prior to USPS action, either UPS or FedEx matches the other's rate change depending on service
- FedEx and UPS appear to be more interested in each other than the Postal Service
 - Match rate increases
 - Retail rates are identical or move in consort
- Where USPS rates are significantly lower or higher than UPS or FedEx, neither appears interested in following the Postal Service's lead



Overall Evaluation of USPS's Impact on Rates of FedEx and UPS Rates (cont'd)

- Differences in how USPS and private sector carriers handle distance and weight in setting prices for overnight and 2-day air parcels suggests
 - that the private sector carriers use a different approach measuring distance and weight-related costs and setting profit margins
- Expanding the comparison of Priority Mail rates to UPS Ground and FedEx Ground 3-day rates will likely show that UPS Ground and FedEx ground is the competitive product for zones 4 and maybe 5 as well
 - In this instance it might make sense for the Postal Service to restructure Priority Mail rates to match actual competition

