

Measuring Market Power

Exercises

- 1 Have a look at the documents that are extracted (attached) from the complaint filed by US DoJ seeking to block the AA-US Airways merger in 2013. Examine the HHI calculations submitted to the court by DoJ
 - 1 What market definition is DoJ using here? Do you think it is appropriate?
 - 2 Pick a route: How much information regarding the underlying (pre-merger) market shares can you extract from the HHI's reported here?
 - 1 Can you work out exact shares?
 - 2 Can you work out upper bounds on the shares of the merging parties?
 - 3 Can you work out anything else informative about the shares of the merging parties?
- 2 Also attached is a question on estimating the demand elasticity of coffee. This illustrates the main economic challenges in using data to understand demand conditions. Work through it....

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA**

UNITED STATES OF AMERICA
450 Fifth Street Northwest, Suite 8000
Washington, DC 20530

STATE OF ARIZONA
1275 West Washington
Phoenix, AZ 85007

DISTRICT OF COLUMBIA
441 Fourth Street Northwest, Suite 600 South
Washington, DC 20001

STATE OF FLORIDA
PL-01, The Capitol
Tallahassee, FL 32399

COMMONWEALTH OF PENNSYLVANIA
14th Floor, Strawberry Square
Harrisburg, PA 17120

STATE OF TENNESSEE
500 Charlotte Avenue
Nashville, TN 37202

STATE OF TEXAS
300 W.15th Street, 7th Floor
Austin, TX 78701

and

COMMONWEALTH OF VIRGINIA
900 East Main Street
Richmond, VA 23219

Plaintiffs,

v.

US AIRWAYS GROUP, INC.
111 W. Rio Salado Parkway
Tempe, AZ 85281

and

AMR CORPORATION
4333 Amon Carter Boulevard
Fort Worth, TX 76155

Defendants.

COMPLAINT

The United States of America, acting under the direction of the Attorney General of the United States, and the States of Arizona, Florida, Tennessee, Texas, the Commonwealths of Pennsylvania and Virginia, and the District of Columbia (“Plaintiff States”), acting by and through their respective Attorneys General, bring this civil action under federal antitrust law to enjoin the planned merger of two of the nation’s five major airlines, US Airways Group, Inc. (“US Airways”) and AMR Corporation (“American”), and to obtain equitable and other relief as appropriate.

APPENDIX A**CITY PAIRS WHERE THE MERGER IS PRESUMPTIVELY ILLEGAL**

- HHIs in this appendix are calculated based on publicly available airline ticket revenue data from Department of Transportation's Airline Origin and Destination Survey (DB1B) database, available at:
http://www.transtats.bts.gov/DatabaseInfo.asp?DB_ID=125&Link=0
- Routes are listed only once but include flights at all airports within the metropolitan area and in both directions. For example, the entry

CITY PAIR ROUTE	Post-Merger HHI	Δ HHI
Charlotte, NC (CLT) - Dallas, TX (DFW)	9319	4648

includes flights from Charlotte, North Carolina, to airports in and around Dallas, Texas, including both Dallas-Fort Worth International Airport (DFW) and Love Field (DAL), and it includes flights from both airports to Charlotte.

APPENDIX A -- CITY PAIRS WHERE THE MERGER IS PRESUMPTIVELY ILLEGAL

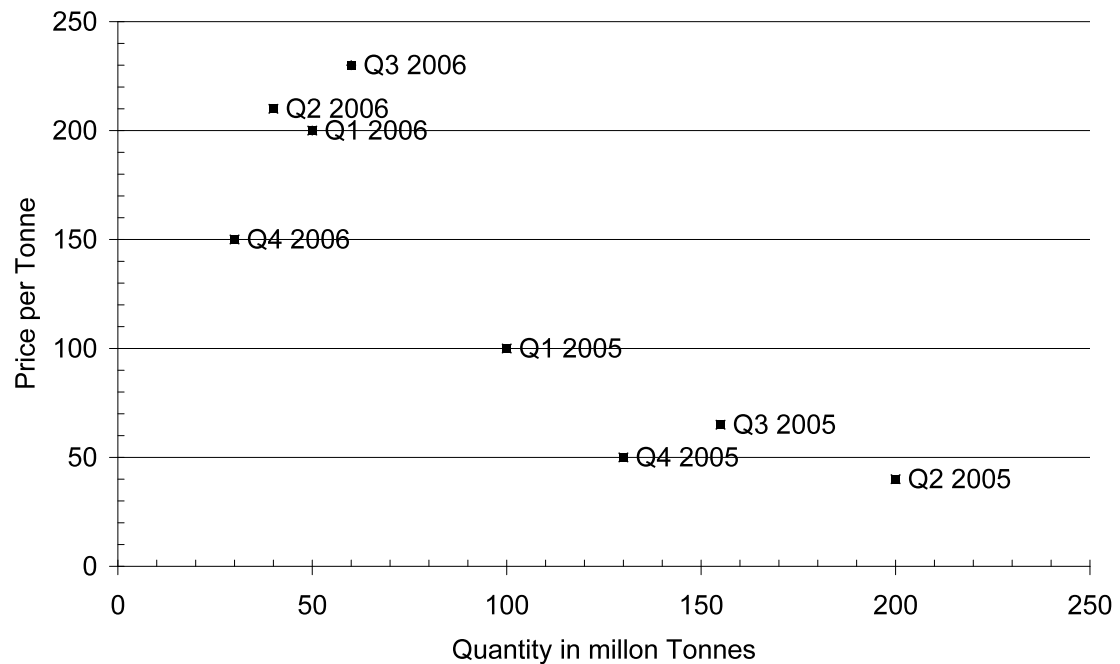
CITY PAIR	Post-Merger HHI	Δ HHI
Charlotte, NC (CLT) - Durango, CO (DRO)	10000	4742
Charlotte, NC (CLT) - Dallas, TX (DFW)	9319	4648
Dallas, TX (DFW) - Philadelphia, PA (PHL)	9067	4491
Kahului, HI (OGG) - Tampa, FL (TPA)	9040	4478
Kapaa, HI (LIH) - St. Louis, MO (STL)	8930	4448
Fresno, CA (FAT) - Tampa, FL (TPA)	8659	4259
Dallas, TX (DFW) - Phoenix, AZ (PHX)	8920	4205
Miami, FL (MIA) - Salinas, CA (MRY)	9540	4079
Indianapolis, IN (IND) - Kahului, HI (OGG)	8174	4006
El Paso, TX (ELP) - Fresno, CA (FAT)	8320	3866
Columbus, OH (CMH) - Riverside, CA (PSP)	7704	3703
Miami, FL (MIA) - Santa Barbara, CA (SBA)	8042	3634
Kapaa, HI (LIH) - Miami, FL (MIA)	8439	3619
El Paso, TX (ELP) - Salinas, CA (MRY)	8415	3612
Pittsburgh, PA (PIT) - St. Croix, VI (STX)	10000	3600
Dallas, TX (DFW) - Greensboro, NC (GSO)	8117	3559
Hilo, HI (KOA) - Miami, FL (MIA)	7329	3528
Hilo, HI (KOA) - St. Louis, MO (STL)	7785	3418
Kahului, HI (OGG) - St. Louis, MO (STL)	8888	3331
Dallas, TX (DFW) - Virginia Beach, VA (ORF)	7780	3316
Greensboro, NC (GSO) - St. Croix, VI (STX)	10000	3299
Salinas, CA (MRY) - St. Louis, MO (STL)	6982	3277
El Paso, TX (ELP) - Kapaa, HI (LIH)	9185	3206
Charlotte, NC (CLT) - Riverside, CA (PSP)	8016	3185
Charlotte, NC (CLT) - Fresno, CA (FAT)	7903	3165
Fresno, CA (FAT) - Milwaukee, WI (MKE)	7185	3164
St. Thomas, VI (STT) - Washington, DC (WAS)	6528	3137
Riverside, CA (PSP) - St. Louis, MO (STL)	6753	3085
Dallas, TX (DFW) - Richmond, VA (RIC)	8339	3085
Austin, TX (AUS) - Santa Barbara, CA (SBA)	6499	3068
Charleston, WV (CRW) - New York, NY (NYC)	6407	3034
Kahului, HI (OGG) - Omaha, NE (OMA)	6897	3033
Austin, TX (AUS) - Salinas, CA (MRY)	6547	3027
Charlotte, NC (CLT) - Kahului, HI (OGG)	10000	3022
Austin, TX (AUS) - Kapaa, HI (LIH)	6499	3006
Riverside, CA (PSP) - Tampa, FL (TPA)	6968	2985
Milwaukee, WI (MKE) - Riverside, CA (PSP)	6319	2966
Chicago, IL (CHI) - Charlottesville, VA (CHO)	8865	2949
Fresno, CA (FAT) - Miami, FL (MIA)	9061	2948
Dallas, TX (DFW) - Salinas, CA (MRY)	7448	2938
Pittsburgh, PA (PIT) - Riverside, CA (PSP)	6446	2932
El Paso, TX (ELP) - Honolulu, HI (HNL)	8116	2923

CITY PAIR	Post-Merger HHI	Δ HHI
Fresno, CA (FAT) - Indianapolis, IN (IND)	6099	2905
Dallas, TX (DFW) - Fresno, CA (FAT)	8312	2899
Fresno, CA (FAT) - San Antonio, TX (SAT)	6197	2895
Dallas, TX (DFW) - Kapaa, HI (LIH)	7991	2892
Raleigh, NC (RDU) - St. Thomas, VI (STT)	6493	2845
Phoenix, AZ (PHX) - St. Thomas, VI (STT)	6178	2843
Austin, TX (AUS) - Riverside, CA (PSP)	6428	2839
El Paso, TX (ELP) - Kahului, HI (OGG)	6861	2808
Columbus, OH (CMH) - Fresno, CA (FAT)	6320	2801
Austin, TX (AUS) - Fresno, CA (FAT)	7074	2795
Kansas City, MO (MCI) - Kahului, HI (OGG)	6274	2772
Dallas, TX (DFW) - Riverside, CA (ONT)	8978	2770
Des Moines, IA (DSM) - Kahului, HI (OGG)	6793	2753
Milwaukee, WI (MKE) - Kahului, HI (OGG)	6867	2717
Kapaa, HI (LIH) - Tucson, AZ (TUS)	6680	2700
Charlotte, NC (CLT) - Reno, NV (RNO)	6887	2672
Dallas, TX (DFW) - Hilo, HI (KOA)	6671	2664
Detroit, MI (DTW) - Fresno, CA (FAT)	6057	2662
Santa Barbara, CA (SBA) - St. Louis, MO (STL)	5691	2656
Columbus, OH (CMH) - St. Croix, VI (STX)	8177	2621
Albuquerque, NM (ABQ) - Salinas, CA (MRY)	6759	2575
El Paso, TX (ELP) - Hilo, HI (KOA)	9515	2574
Atlanta, GA (ATL) - Fresno, CA (FAT)	5717	2571
Charlotte, NC (CLT) - Tucson, AZ (TUS)	5647	2567
Charlotte, NC (CLT) - Riverside, CA (ONT)	5750	2503
Fresno, CA (FAT) - Pittsburgh, PA (PIT)	6024	2501
Detroit, MI (DTW) - Riverside, CA (PSP)	5443	2491
Albuquerque, NM (ABQ) - Kapaa, HI (LIH)	6473	2484
Charlotte, NC (CLT) - Grand Junction, CO (GJT)	6077	2475
Kansas City, MO (MCI) - Riverside, CA (PSP)	5473	2455
Albuquerque, NM (ABQ) - Santa Barbara, CA (SBA)	6410	2455
Hilo, HI (KOA) - Orlando, FL (MCO)	5588	2454
Philadelphia, PA (PHL) - St. Thomas, VI (STT)	7040	2449
Hartford, CT (BDL) - St. Thomas, VI (STT)	5373	2444
Charlottesville, VA (CHO) - St. Louis, MO (STL)	6691	2438
Dallas, TX (DFW) - Riverside, CA (PSP)	8959	2428
Miami, FL (MIA) - Riverside, CA (PSP)	7592	2423
Denver, CO (DEN) - St. Thomas, VI (STT)	5838	2407
Minneapolis, MN (MSP) - St. Croix, VI (STX)	5878	2402
Miami, FL (MIA) - Kahului, HI (OGG)	7973	2388
Columbus, OH (CMH) - Kahului, HI (OGG)	7136	2383
Dallas, TX (DFW) - Raleigh, NC (RDU)	7871	2354

The Coffee market

The graph below shows the global market for unprocessed coffee beans. It shows the world price and the quantity of beans bought for each quarter in 2005 and 2006. The market works by farmers growing coffee beans and then selling them on the open market to producers who roast, package and market the ground coffee. The global coffee market is perfectly competitive.

Price and Quantity: Global Unprocessed Coffee 2005-2007



You are managing a team trying to work out how responsive the demand for unprocessed coffee is to price changes. During your research you find out the following:

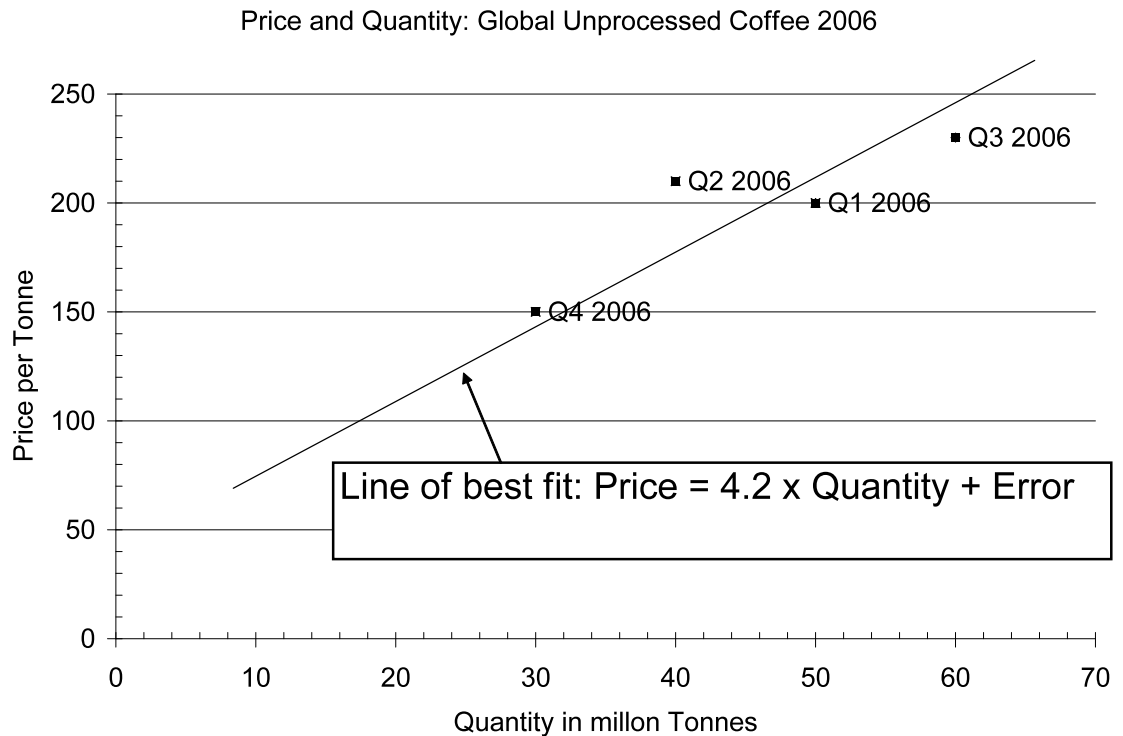
- 1) The price of tea doubled at the start of the third quarter of 2006 and then decreased sharply at the start of the fourth quarter. During the rest of 2005/2006 the price of tea has been constant.
- 2) Disease wiped out half the Brazilian coffee crop in the first week of January 2006. It takes two years for crops to recover.

Answer the following questions: using a diagram is encouraged:

- a) Account for the price and quantity movements in the final 2 quarters of 2005 and Q1 2006
 - b) Account for the price and quantity movements during the three quarters following Q1 2006.
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Now do the following:

A rival team at another firm has published a report using only the 2006 data. They use regression analysis to estimate the demand of unprocessed coffee. Their regression analysis gives the following results (drawn from the report)



- c) If we believe the results in this rival report, what is the demand elasticity when quantity is equal to 30?
- d) Do these results implied by the rival report make sense? Justify your answer.
- e) Identify the source of the mistake in the analysis of the rival team. Use a diagram if appropriate or feel free to refer to your earlier answers
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