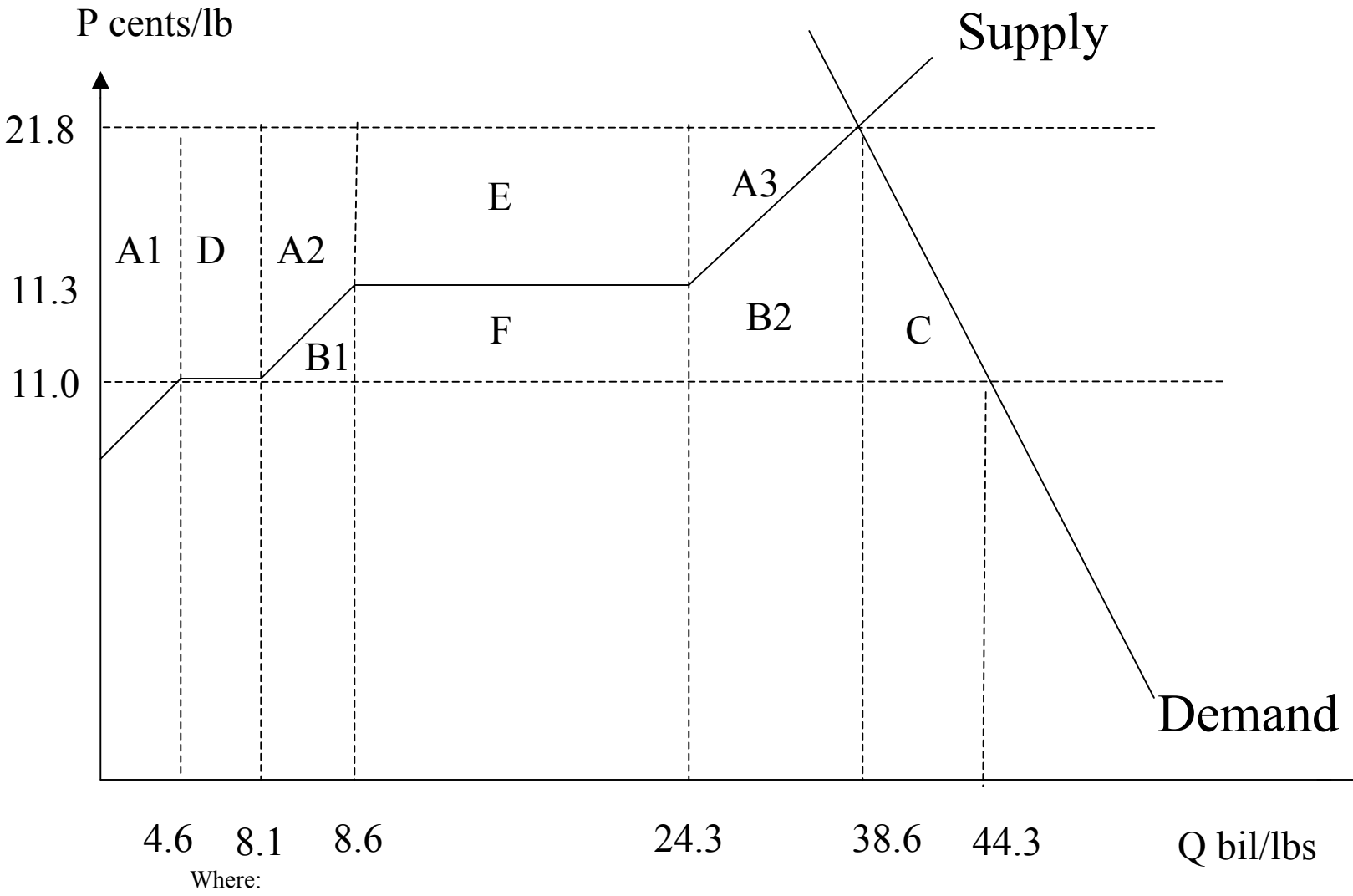
15.010/011: Consumer Surplus and the Sweetener Quota Analysis



Where:

A1 – Domestic Producer Surplus (*above 11*) for producers who would produce at prices of 11.0 or below.

A2 – Domestic Producer Surplus for producers who only would produce between 11.0 and 11.3.

A3 – Domestic Producer Surplus for producers who only would produce at prices of 11.3 and above.

B1 – Excess Cost (above 11) for Domestic Producers who would produce at prices between 11 and 11.3.

B2 – Excess Cost (above 11) for Domestic Producers who would produce at prices of 11.3 and above.

C – Consumer surplus (loss) for demand with marginal valuations between 11 and 21.8, at world price of 11.

D – Profits to Foreign Producers from selling at US price of 21.8 instead of world price of 11.

E – Profits on HFCS

F – Excess Cost of HFCS production, above world sugar price of 11.

Calculations

B1 = 0.5*(0.3*0.5) = .075 billion cents = $ 0.75 million = $ 750 thousand

A1 = 10.8*4.6 = 49.7 billion cents = $ 497 million

A2 = 10.8*0.5 - B1 = 5.33 billion cents = $ 53.3 million

E = 15.7*10.5 = 164.9 billion cents = $ 1,649 million

F = 15.7*0.3 = 4.7 billion cents = $ 47 million

A3 = 0.5*(14.3*10.5) = 75.1 billion cents = $ 751 million

B2 = 14.3*10.8 - A2 = 79.3 billion cents = $ 793 million

D = 10.8*3.5 = 37.8 billion cents = $ 378 million

C = 0.5*(5.7*10.8) = 30.8 billion cents = $ 308 million

A = A1+A2 = $ 1,300 million B = B1+B2 = $ 794 million

change in CS = (A+B+E+F+D+C) = 10.8*38.6 +C = 334+23 = $ 4.475 billion.

change in PS = A+E = $ 2.949 billion

•Revenue to importers = D = $ 378 million

•Deadweight loss = B+F+C = $ 1,149 million