

■ Appendix A

```
Off[General::spell];
Off[General::spell1];
thinn = AbsoluteThickness[.5];
medum = AbsoluteThickness[1.];
thick = AbsoluteThickness[1.5];
$TextStyle = {FontFamily -> "Helvetica", FontSlant -> "Plain", FontSize -> 9};
SetOptions[Plot, PlotPoints -> 40, ImageSize -> 384];
SetOptions[Plot, FrameStyle -> medum, AxesStyle -> medum, PlotStyle -> medum];
Black = GrayLevel[0];
BGray = GrayLevel[0.3];
WGray = GrayLevel[0.6];
<< Graphics`Arrow`
```

■ Appendix A (&Figure 9A.1)

■ for numeric example

```
tv = 12000.;
ε = -1.;
Δw = 1500.;
w* = 15000.;
```

```
averageb = tv / Δw
```

```
8.
```

```
b = (2. * tv) / ((w*) ^ 2. - 2. * ε * w* * Δw)
```

```
0.0000888889
```

```
a = b * w* * (1 - ε)
```

```
2.66667
```

```
mb = -b * w* + a
```

```
1.33333
```

■ for numeric example if functional form is constant elasticity and ε is not -1

```
tv = 12000.;
ε = -0.5;
Δw = 1500.;
w* = 15000.;
```

```
averageb = tv / Δw
```

```
8.
```

$$k = \left(\left(\frac{\epsilon}{(1 + \epsilon) * tv} \right) * \left(w^* \frac{1+\epsilon}{\epsilon} - (w^* - \Delta w) \frac{1+\epsilon}{\epsilon} \right) \right)^\epsilon$$

40249.2

$$mb = \left(\frac{w^*}{k} \right)^{\frac{1}{\epsilon}}$$

7.2

■ for numeric example if functional form is constant elasticity and $\epsilon=-1$

`tv = 12000.;`

`epsilon = -1.;`

`Delta w = 1500.;`

`w* = 15000.;`

`averageb = tv / Delta w`

8.

`k = tv / Log[w* / (w* - Delta w)]`

113895.

$$mb = \frac{k}{w^*}$$

7.59298

■ for graph

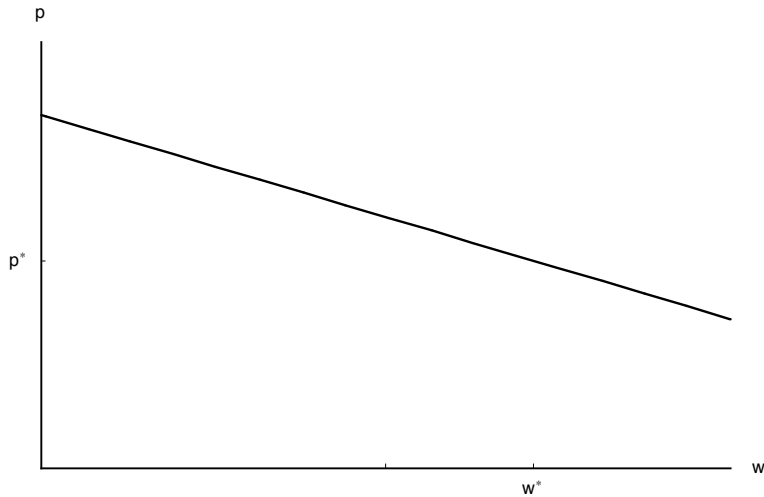
`w = .;`

`mb2 = -0.0000888889 * w + 2.66667;`

```

p19A1a = Plot[mb2, {w, 0, 17000},
  AxesOrigin -> {10000, 0.7},
  AxesLabel -> {"w", "p"},
  PlotRange -> {{10000, 17000}, {0.7, 2}},
  Ticks -> {{{13500, ""}, {15000, "w*"}}, {{1.33333, "p*"}}}]

```

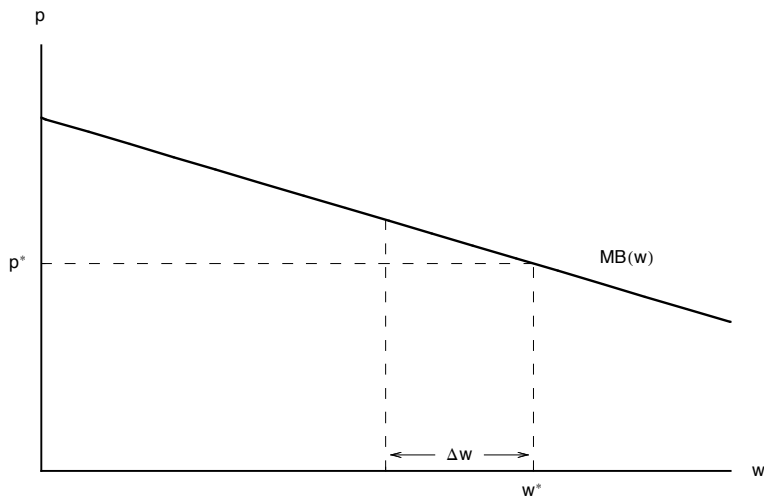


- Graphics -

```

p19A1 = Show[p19A1a,
  Graphics[Text["Δw", {14250, 0.75}]],
  Graphics[Text["MB(w)", {15950, 1.35}]],
  Graphics[{Arrow[{14000, 0.75}, {13500., 0.75}, HeadCenter -> 0.2, HeadLength -> 0.015]}],
  Graphics[{Arrow[{14500, 0.75}, {14950, 0.75}, HeadCenter -> 0.2, HeadLength -> 0.015}]],
  Graphics[{Dashing[.015, .02], thinn, Line[{{15000, 0.7}, {15000, 1.3333}}],
    Line[{{13500, 0.7}, {13500, 1.471}}],
    Line[{{10000, 1.33333}, {15000, 1.3333}}]
  ]},
  DisplayFunction -> $DisplayFunction]

```



- Graphics -