*' Compuation of all relevant derivatives for the RBA — article *
 *' here Log[z] gives the natural logarithm of z (logarithm to base e) see manual
 WolframAlpha Mathematica 12 Version 12.0 × .0 × .0'*
Wolfram Alpha

In[19]:=

TB = B * (c^h / (c^h + K^h))^g + b * c

Out[19]= $b\,c + B\left(\dfrac{c^h}{c^h + K^h}\right)^g$

In[20]:= D[TB, B]
leite ab

Out[20]= $\left(\dfrac{c^h}{c^h + K^h}\right)^g$

In[21]:= D[TB, K]
leite ab

Out[21]= $-\dfrac{B\,c^h\,g\,h\,K^{-1+h}\left(\frac{c^h}{c^h+K^h}\right)^{-1+g}}{(c^h + K^h)^2}$

In[22]:= D[TB, h]
leite ab

Out[22]= $B\,g\left(\dfrac{c^h}{c^h + K^h}\right)^{-1+g}\left(\dfrac{c^h\,\text{Log}[c]}{c^h + K^h} - \dfrac{c^h\,(c^h\,\text{Log}[c] + K^h\,\text{Log}[K])}{(c^h + K^h)^2}\right)$

In[23]:= D[TB, g]
leite ab

Out[23]= $B\left(\dfrac{c^h}{c^h + K^h}\right)^g \text{Log}\left[\dfrac{c^h}{c^h + K^h}\right]$

In[24]:= D[TB, b]
leite ab

Out[24]= c

In[25]:= **D[TB, c]**

leite ab

Out[25]= $b + B \, g \left(\dfrac{c^h}{c^h + K^h} \right)^{-1+g} \left(-\dfrac{c^{-1+2h} \, h}{(c^h + K^h)^2} + \dfrac{c^{-1+h} \, h}{c^h + K^h} \right)$

In[36]:= **SB = B * (c^h / (c^h + K^h))^g**

Out[36]= $B \left(\dfrac{c^h}{c^h + K^h} \right)^g$

In[27]:= **D[SB, B]**

leite ab

Out[27]= $\left(\dfrac{c^h}{c^h + K^h} \right)^g$

In[28]:= **D[SB, K]**

leite ab

Out[28]= $-\dfrac{B \, c^h \, g \, h \, K^{-1+h} \left(\frac{c^h}{c^h + K^h} \right)^{-1+g}}{(c^h + K^h)^2}$

In[29]:= **D[SB, h]**

leite ab

Out[29]= $B \, g \left(\dfrac{c^h}{c^h + K^h} \right)^{-1+g} \left(\dfrac{c^h \, \mathrm{Log}[c]}{c^h + K^h} - \dfrac{c^h \, (c^h \, \mathrm{Log}[c] + K^h \, \mathrm{Log}[K])}{(c^h + K^h)^2} \right)$

In[37]:= **D[SB, g]**

leite ab

Out[37]= $B \left(\dfrac{c^h}{c^h + K^h} \right)^g \mathrm{Log}\left[\dfrac{c^h}{c^h + K^h} \right]$

In[38]:=

D[SB, c]

leite ab

Out[38]= $B \, g \left(\dfrac{c^h}{c^h + K^h} \right)^{-1+g} \left(-\dfrac{c^{-1+2h} \, h}{(c^h + K^h)^2} + \dfrac{c^{-1+h} \, h}{c^h + K^h} \right)$

In[39]:= **NSB = b ∗ c**

Out[39]= b c

In[40]:= **D[NSB, b]**
⌊leite ab

Out[40]= c

In[41]:= **D[NSB, c]**
⌊leite ab

Out[41]= b