Calculate price-dividend ratio for market portfolio:Plot price-dividend ratio (on vertical axis) vs b0

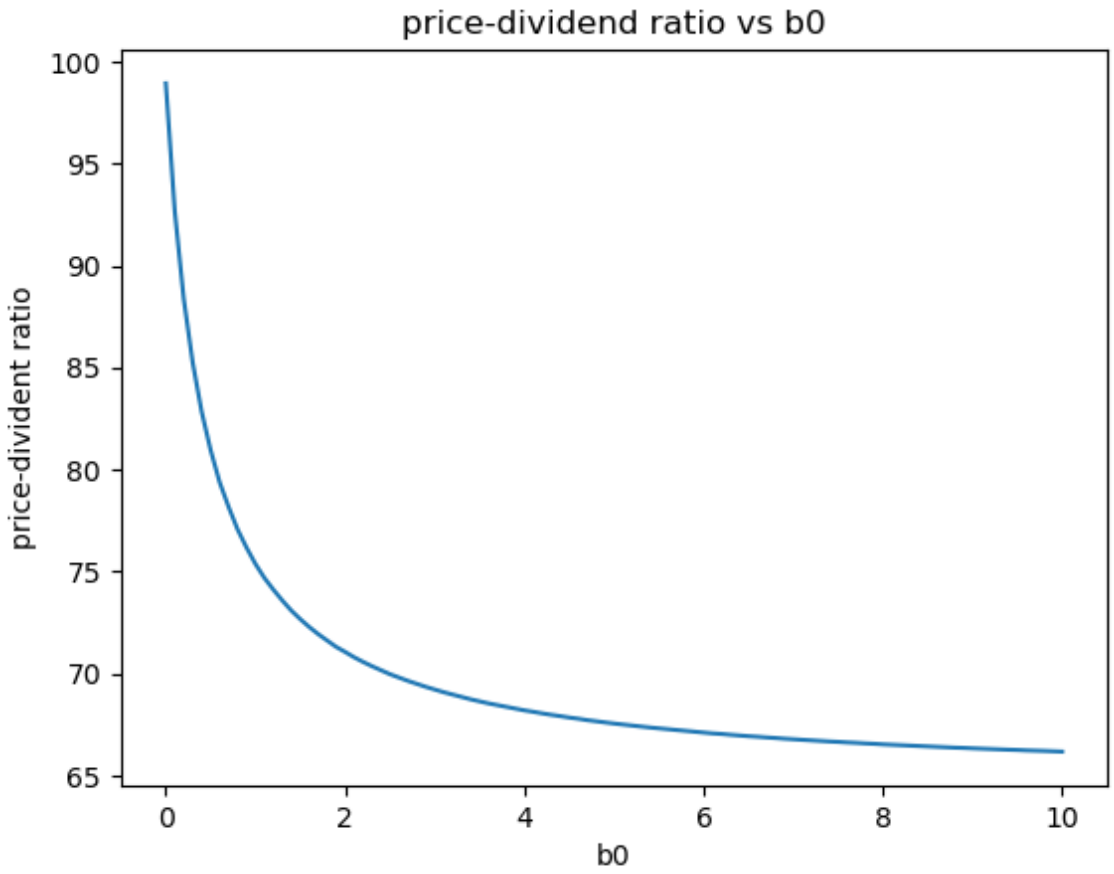
In [93]:

Out[93]:

	b0	price_dividend_ratio
0	0.0	98.937198
1	0.1	92.669683
2	0.2	88.371090
3	0.3	85.244537
4	0.4	82.831143
...	...	...
96	9.6	66.218046
97	9.7	66.204667
98	9.8	66.191294
99	9.9	66.174585
100	10.0	66.157884

101 rows × 2 columns

In [91]:



Calculate expected market return:Plot equity premium (on vertical axis) vs b0.

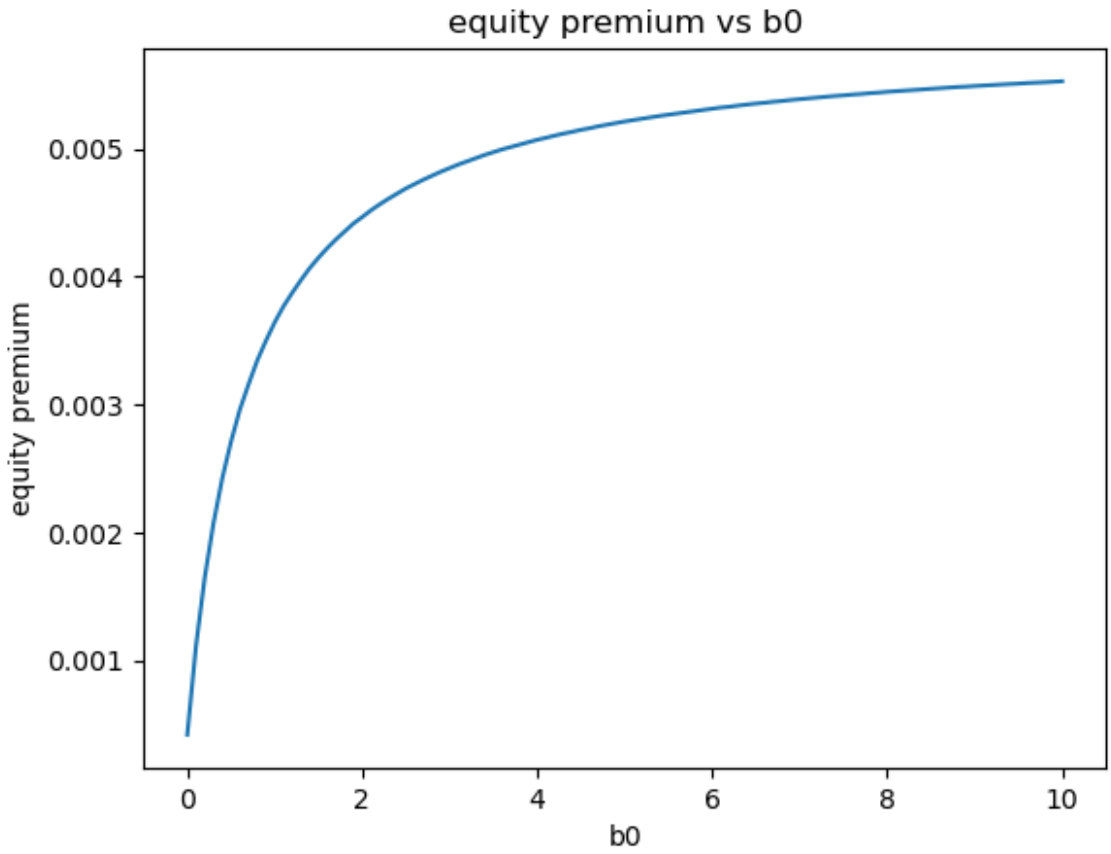
In [95]:

Out[95]:

	b0	E_Rm
0	0.0	1.030719
1	0.1	1.031417
2	0.2	1.031952
3	0.3	1.032376
4	0.4	1.032725
...	...	...
96	9.6	1.035815
97	9.7	1.035818
98	9.8	1.035821
99	9.9	1.035825
100	10.0	1.035829

101 rows × 2 columns

In [97]:



Briefly explain main characteristics of v(·) (which is utility function to measure utility from recent financial gain or loss), as well as economic significance of b0 and λ.

`main characteristics of v(·):`

Recent financial gain or loss is measured relative to reference level based on risk-free rate

Loss aversion makes investor more sensitive to shortfall in financial gain, so lambda > 1

`b0`

b0 determine extent to which utility from recent financial gain or loss contributes to investor's lifetime utility

`lambda`

lambda meansures how investor sensitive to shortfall in financial gain, lambda > 1, and more larger means more risk averse