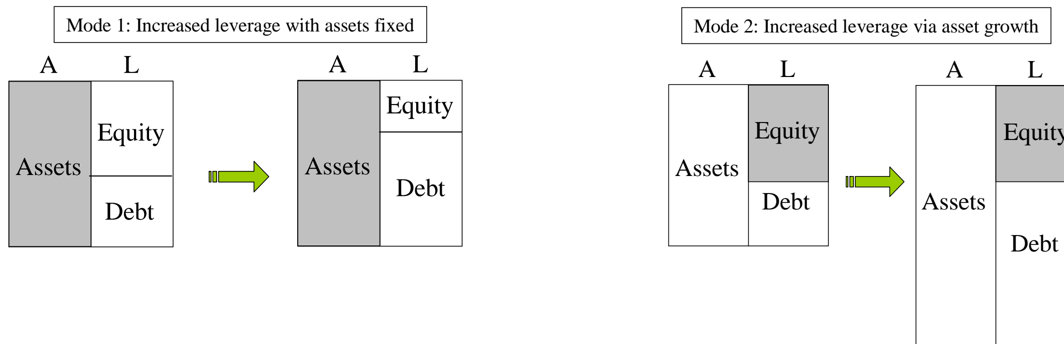


Figure 10. **Two Modes of Leveraging Up.** In the left panel, the firm keeps assets fixed but replaces equity with debt. In the right panel, the firm keeps equity fixed and increases the size of its balance sheet.

description of the way that the banking sector leverage varies over the financial cycle. For banks, however, leverage fluctuates through changes in the total size of the balance sheet with equity being the pre-determined variable. Hence, leverage and total assets tend to move in lock-step, as depicted in the right hand panel of Figure 10. A consequence of this feature is that equity should be seen as the pre-determined variable when modeling bank lending, and we can see banks as choosing their leverage given the fixed level of bank equity. This is the approach we will take here.[4]

## 4.1 Bank Credit Supply

Credit in the economy is intermediated through banks. We assume that workers (as investors) cannot lend directly to entrepreneurs, and must lend through the banking sector. Banking sector equity $E$ is fixed, with equity ownership evenly distributed among the worker population. Credit is short-term, and rolled over every period. The bank lends out amount $C$ (for "credit") at date $t$ at the lending rate $r$, so that the bank is owed $(1+r)\,C$ in date $t+1$. The lending is financed from the combination of equity $E$ and

[4] Adrian and Shin (2012) discuss the reasons for the distinctive patterns in bank balance sheet management and its consequences for the financial cycle.