

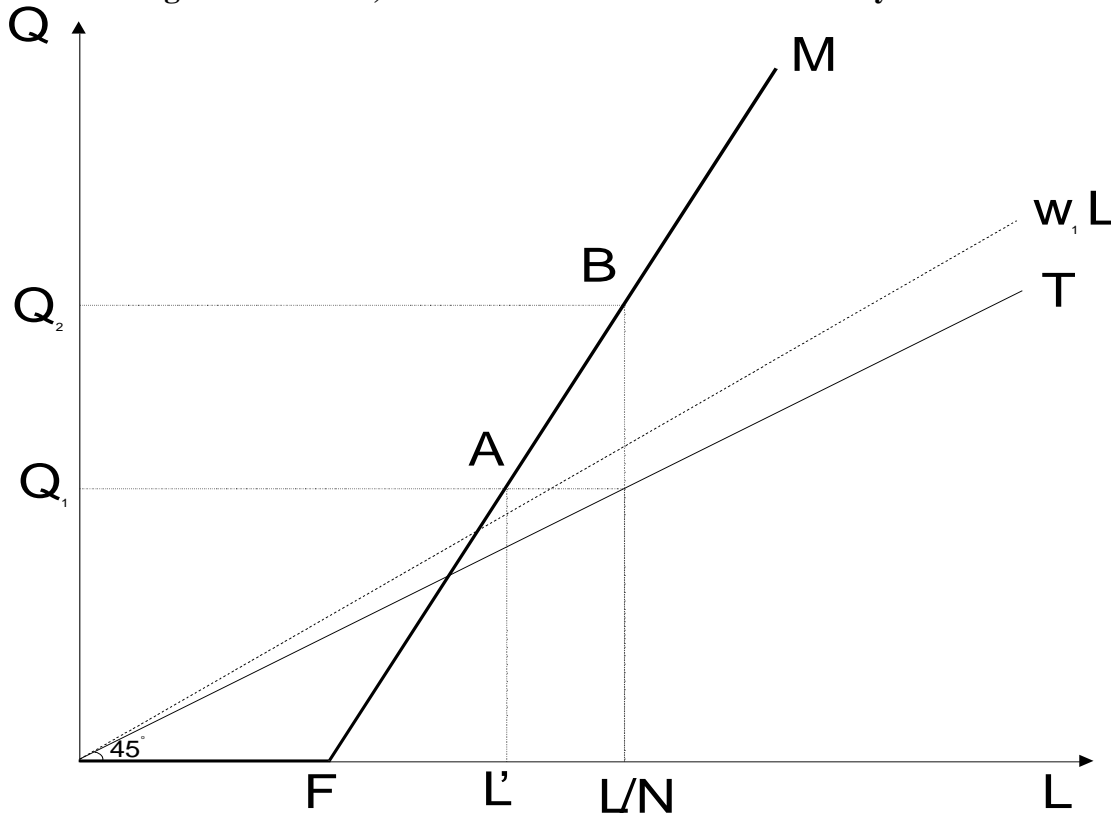
# The Big Push Model

This note is intended to give a brief overview of a graphic presentation of the Big Push model. We have an economy with a large number of sectors. Each sector is so small that what happens in one sector has no impact on the economy as a whole. There are a total of  $L$  workers and  $N$  sectors, so there are  $L/N$  workers in each sector.

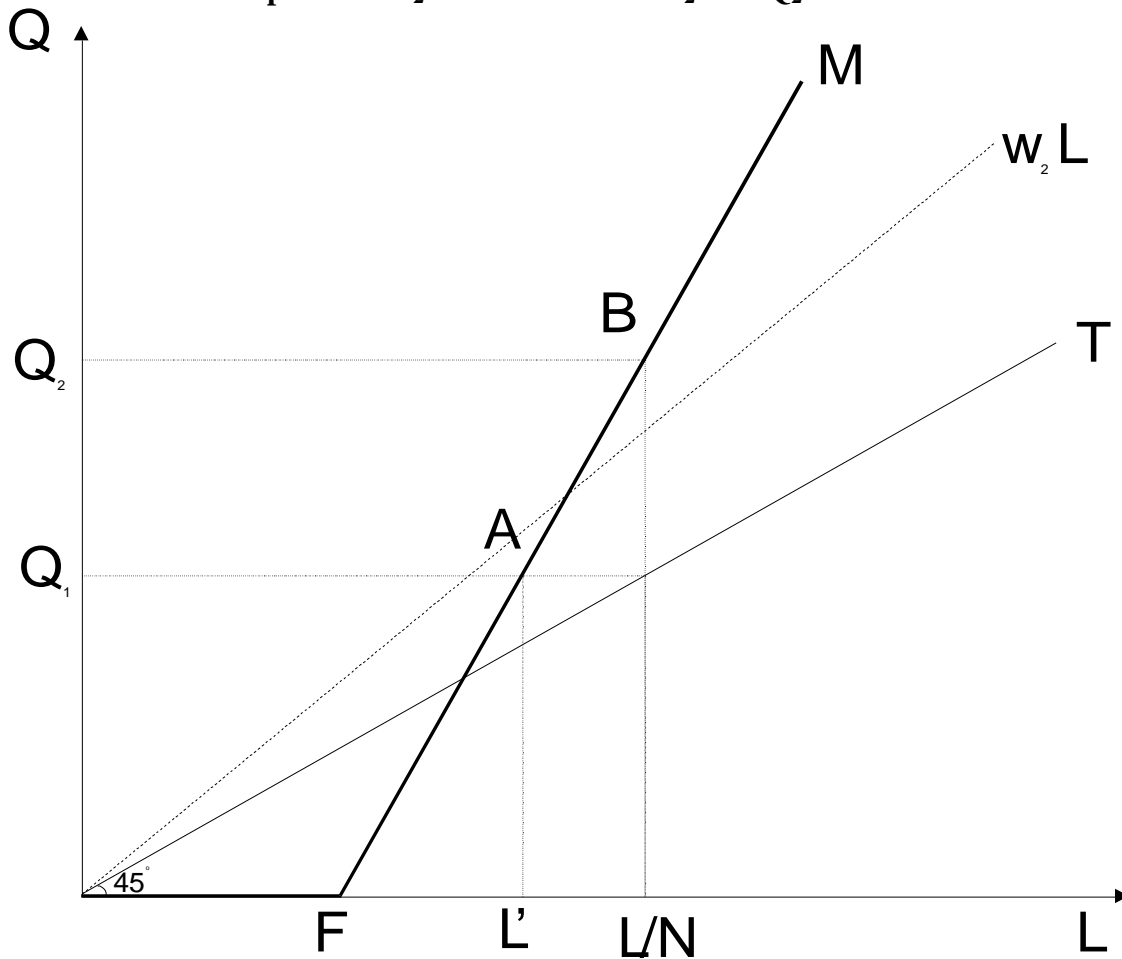
Each sector can either use a traditional or a modern technology. Using the traditional technology, one worker produces one unit of goods, so the sector would produce an amount equal to  $L/N$ . The modern sector requires  $F$  workers for administrative tasks, but the remaining workers produce more than one unit of goods per worker. This is depicted in the figures, where  $T$  is the production in the traditional sector and  $M$  the production in the modern sector. The way it is drawn, production is higher with modern than with traditional technology if we have  $L/N$  workers.

In the traditional sector, workers get paid one unit of goods for their work which they spend equally in all sectors. Hence if all workers are working in the traditional sector, demand towards all sectors is  $Q_1=L/N$ . In the modern sector they get paid more. Each worker costs  $w$ , which we will look at more closely.

Consider first  $w_1$ , which is a low wage. A firm facing demand  $Q_1$  will require  $L'$  workers if it chooses the modern technology. This will cost  $w_1L'$ , and earnings will be  $Q_1$ . The way  $w_1$  was chosen, we see that  $w_1L' < Q_1$ , so the firm makes a profit. Hence if wages are this low, it will modernize even if it is the only one to do so.



Consider now a higher wage  $w_2$ . Now we see that if no other firms modernize, so the firm faces demand  $Q_1$ , it will make a loss as  $w_2 L' > Q_1$ . Hence the firm will not choose to modernize if nobody else does. If all the others have modernized, though, the firm faces demand  $Q_2$ . In that case, it will choose to modernize as well. This is because it would now make a profit as  $w_2$  is chosen so that  $w_2 L/N < Q_2$ .



Notice also that if the wage is very high, it may be that the firm will never modernize. This is the case if  $w_3 L/N > Q_2$ . This case is shown in Fig. 4.2 in the book. The most interesting case is  $w_2$  though. Then we have a coordination problem as firms want to modernize if everybody else does, but they do not want to be the first to modernize. Hence we can get both a modern and a traditional equilibrium.