Economics 4351: Labor Economics

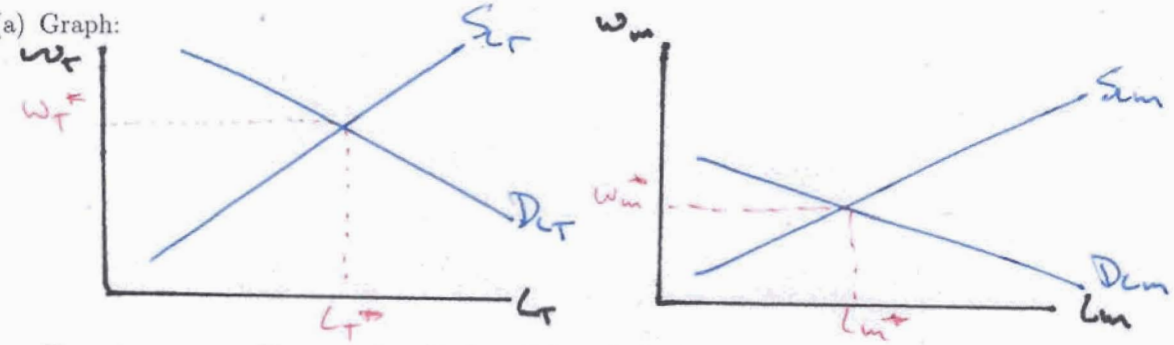
Southern Methodist University

Department of Economics

Midterm II – Answers

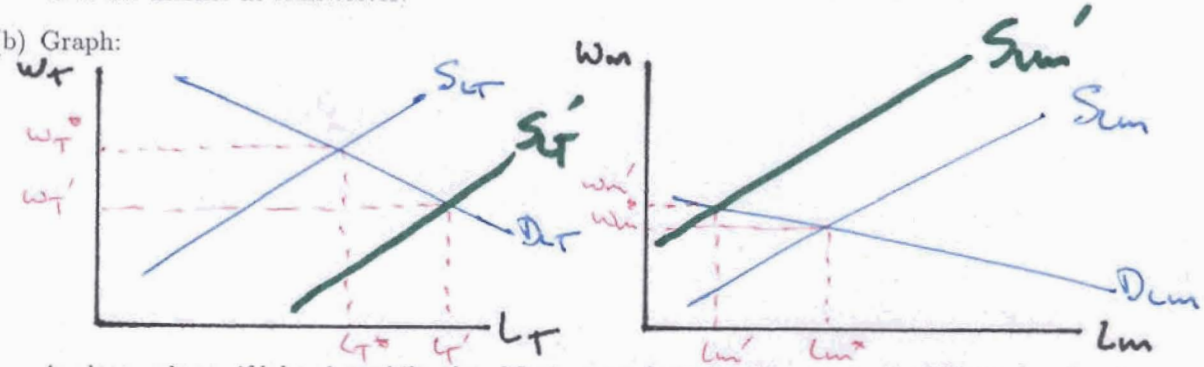
1. Dual labor markets:

(a) Graph:



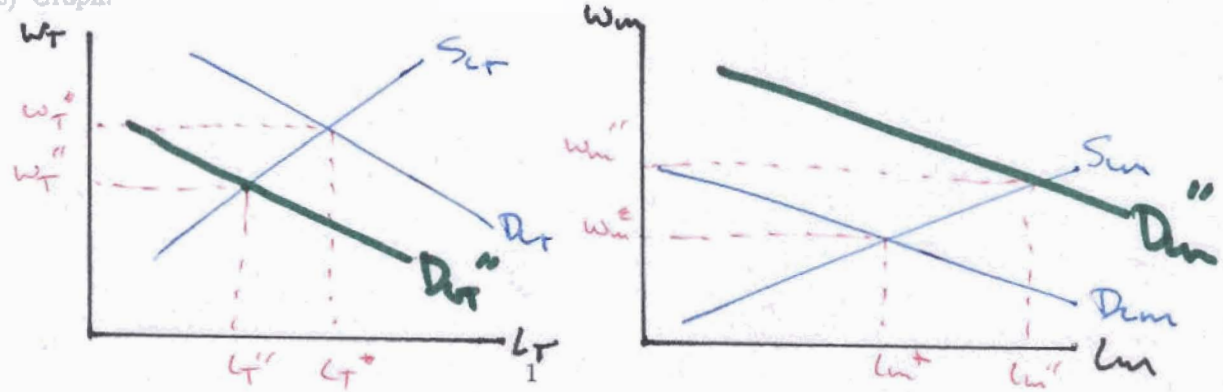
There is no unemployment despite L and firms being immobile as long as the wage adjusts to clear the market in each sector.

(b) Graph:



As shown above, if labor is mobile, then Mexican workers should move to the US to take advantage of the higher wage. This shifts the L^S curve in in Mexico and shifts the L^S curve out in the US. The result is an increase in the Mexican wage, a decrease in the US wage, an increase in US employment, a decrease in Mexican employment, and no unemployment. Workers should continue to migrate from Mexico to the US until the wages are equalized (assuming it is costless to migrate).

(c) Graph:

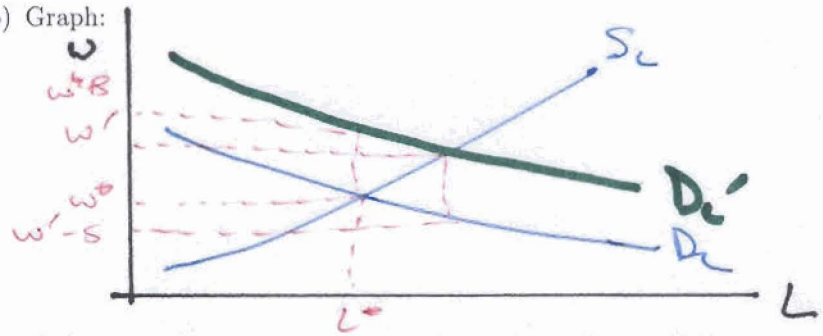


If firms were mobile instead of labor, then US firms should move to Mexico to utilize cheaper labor. This shifts in the L^D curve in the US, shifts out the L^D curve in Mexico. The result is greater employment in Mexico, less employment in the US, a higher wage in Mexico, a lower wage in the US, and no unemployment. Firms should continue to relocate to Mexico until the wages are equalized (assuming it is costless for firms to move).

2. Subsidies:

   (a) The subsidy shifts out the labor demand curve. Thus, the new equilibrium involves a higher wage and greater employment.

   (b) Graph:



   If there was no unemployment prior to the policy and the wage is free to adjust to the new equilibrium level, there will be no unemployment with the policy either.

3. Segmented Labor Markets\Discrimination:

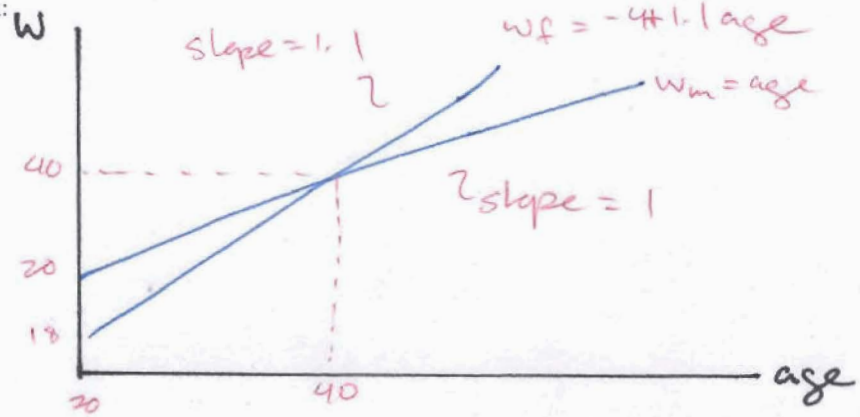
   (a) Since there are not enough black teachers to staff the inner city school, white teachers must also be hired. The only way a white teacher will accept a job at the inner city school (given the preferences as explained in the question) is if the wage is higher than at the suburban school. Since all workers within a school district receive the same wage, black teachers also receive a higher wage if they work at the inner city school. Thus, black teachers benefit from the fact that white teachers are not indifferent between school districts.

   (b) Since black teachers are indifferent between school districts, clearly they prefer working at the inner city school for a higher wage than the suburban school for a lower wage. In the end, the inner city school pays a higher wage and employs all the black teachers and a few white teachers. The suburban school pays a lower wage and hires the remaining white teachers. The wage differential across school districts will be such that white teachers are indifferent across the two districts.

4. Discrimination:

   (a) Starting wages at 20: $w_m = 20$; $w_f = 18$. Starting wages at 40: $w_m = 40$; $w_f = 40$. Thus, at age 40 the starting salaries of females finally catches up to that for males.

(b) Graph:



(c) Firms might offer lower starting wages for women over this age range because women may be more likely to leave the firm for childrearing reasons. Once women are 40, the firm may no longer feel there is any difference between men and women in the expected duration they will be with the firm.

5. Human capital vs. signaling:

(a) The human capital theory argues that education is effective and increases a worker's productivity and, therefore, wage. Innate ability, while potentially also important, is not the dominant wage determinant. The signalling model argues that education is not effective at all in improving a worker's productivity, rather productivity is solely determined by one's innate ability. If high ability find it optimal to be better educated then low ability workers, then education is a "signal" of innate ability. As a result, workers with better education are better paid, but this is just a correlation and not indicative of causation. The cause of the higher wage is the higher innate ability.

(b) The human capital model attributes it to the fact that as we age, our human capital which was accumulated during college becomes outdated and, consequently, our productivity (and hence wage) falls. The signaling model might argue that as we age our innate ability decreases due to biological reasons. It would also be consistent with the signalling model to argue that workers find it less optimal to learn new skills (e.g., a new computer system) once they are older as they will retire soon. Therefore, the horizon over which they reap the benefits of newly acquired skills is too short to justify the sunk cost of acquiring the new skill.

6. In order for a low-ability worker to not pursue education, it must be that $\$25,000 \geq K - \$20,000$ which requires $K \leq \$45,000$. Similarly, in order for a high-ability worker to pursue education, it must be that $K - \$8,000 \geq \$25,000$ which requires $K \geq \$33,000$. Thus, in order to use education as a signaling device, it must be that educated workers are paid between \$33,000 and \$45,000.