

Teaching Plan

Title	Backward Bending Labor Supply Curves
Instructional Objectives	<ul style="list-style-type: none"> ➤ To derive an individual labor supply curve ➤ To derive a market labor supply curve
Keywords and Concepts Illustrated	<ul style="list-style-type: none"> ➤ Backward bending labor supply curve ➤ Market labor supply curve ➤ Substitution Effect ➤ Income Effect
Needed Time	➤ A double-period lesson, about 80 minutes

Sessions	Details	Time Spent
Activity/ Announcement	<ol style="list-style-type: none"> 1. T: Let us have a game. Divide yourself into six groups of six to seven students. I have a task for you. I want one representative from each group to do a turn step exercise. 2. Put two chairs side by side and demonstrates to students how to do and count a turn-step (please refer to turnstep.html for illustration. One completed turn-step means the student finishes at where he/she starts). 3. T: Now, quietly move your desks aside, each group should have two chairs for this exercise and at least 2 students to hold the chairs for safety reason. I will now give you two minutes to have some practice. After practicing, choose the strongest person for this task. 4. After two minutes, T: So, each group should have two persons holding the chairs and one representative to do the turn-step. What about the other 3 to 4 team members? I want one student to count the no. of turn-step your teammate has done; one student to report the no. of steps to me and the other to be the monitor of another group, to make sure the other group's representative is doing every step correctly and reporting the right no. Should you have the 7th member in the team, please be your team's helper whenever it is needed. 5. T: OK, I want everyone who is the monitor to go to other group. Group 1's monitor please go to Group 2 and be their monitor. Group 2's to Group 3 and so on. 6. T: Now, I give you one minute to do the step-up. For every step-up your teammate has done, your group gets one 	<p>5 mins</p> <p>5 mins</p> <p>5 mins</p>

	<p>bonus point. At the end of the lesson, your group can buy any of these items (show students all the wrapped prizes, please refer the session “Tools” for details) with the point you earn.</p> <p>7. Ask students to get ready and say “Go”. Keep time for one minute. Then ask each group to report the no. and cross check with every monitor. Record down the no. on Table 1. (Don’t show the Table 1 to students now because students should not know how many rounds you will play.)</p> <p>8. T: Do you want to earn more bonus points? This time, you can get two bonus points for one step-up, but you cannot change your representative.</p> <p>9. Say “Go” and keep time for one minute. Then ask each group to report the no. and cross check with every monitor. Record down the no. on Table 1. Teacher can give them more rounds to do the step-up. Add one more bonus point in each round until you observe a decline in the number of turn-step done. Students have to keep using the same representatives in every round. Most importantly, do not let students know how many rounds you decide to play.</p> <p>10. Project Table1 on board. Distribute each group an A3 sized paper with Diagram1 drawn on it already and a marker. Ask them to plot a curve to show the relationship between the number of step-up done by their group and the bonus point per step-up on the paper.</p> <p>11. Ask each group to post its diagram on board. Teacher now explains to students that this curve can be seen as an individual labor supply curve. Bonus point is wage; number of step-up is number of working hour an individual is willing and able to supply under certain wage level. Normally, the curve should be backward bending, and then teacher can explain the reason behind. Explain also the substitution and income effects.</p> <p>12. After introducing the backward bending individual labor supply curve, teacher can draw a market labor supply curve i.e., the summation of each group’s individual labor supply curves on board (refer to Diagram 2).</p> <p>13. At the end of the lesson, each group can use their bonus</p>	<p>3 mins</p> <p>15 mins</p> <p>10 mins</p> <p>20 mins</p> <p>7 mins</p>
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	<p>points to buy prize(s) from teacher. From experience, students can do about 20 turn-steps per round. If you play six rounds, some groups can get at least 400 points. When teacher prices his/her goods, he/she should consider how many total points each group can get.</p> <p>14. Lesson recap</p> <ul style="list-style-type: none"> ➤ Why the labor supply curve is a backwardly bending curve instead of a straight line? ➤ What effect does dominate in the upward-sloping part of an individual labor supply curve? ➤ What effect does dominate in the downward-sloping part of an individual labor supply curve? ➤ Does the shape of market labor supply curve is different from the one of individual labor supply curves? Why? 	10 mins
Roles of Teachers	<ul style="list-style-type: none"> ➤ Facilitator 	
Tools	<ul style="list-style-type: none"> ➤ Markers – prepare one for each group to plot graph ➤ A3 sized papers, one for each group, with Diagram1 drawn on each already. ➤ Prizes –Teacher can buy some small bags of candies or stationary, wrapped, priced and placed them before the class. Suggested prices are 100, 200, 300 and 400 points. Since each group can buy more than one prize as long as the group has enough points, the number of prize should be greater than the number of groups (especially for those lower “price” goods). ➤ Table 1 printed on transparency ➤ Overhead projector ➤ Computer and projector (please refer to the session on “Variations of the Experiment”). 	
Definitions	<ul style="list-style-type: none"> ➤ Backward bending labor supply curve ➤ Market labor supply curve ➤ Substitution effect ➤ Real income effect 	
Past Experience	<ul style="list-style-type: none"> ➤ Most students enjoyed the game and the representatives tried their best to do the step-up. ➤ When we used this game last time, we only awarded the 	

	<p>group which had earned the highest points. However, such reward system does not mimic the real world where you earn as you work. Therefore, we suggest that every group should be rewarded for what they have earned.</p> <ul style="list-style-type: none"> ➤ The data collected from the game can be seen in Data Set. Some individual labor supply curves are zigzag and not exactly backward bending. It is because students were competing against each other and they were told when it was the last round. Thus, we strongly suggest teachers not to tell students how many rounds are left. 	
Variations of this Experiments	<ul style="list-style-type: none"> ➤ You can do sit-up or other countable exercises which students can do in classroom instead of step-up. ➤ You can use other way to reward students, such as ten points for a candy, etc. ➤ Teacher can use computer worksheet (refer to our Sample Data Set) instead of Table 1 and Diagram 1 & 2 to record and draw the curves. 	
References	<ul style="list-style-type: none"> ➤ Lee, D. P., 2000, "Take this job and shove it, at the margin". <i>The Foundation for Economic Education</i>. Pp. 10-14. 	

Appendix I – Materials for Teacher

Table 1	Step-up done Record Sheet (transparency)
Diagram 1	Individual Labor Supply Curve
Diagram 2	Market Labor Supply Curve
Sample Data Set	Sample Data Collected
Turnstep.html	