ECONOMICS, AN INTRODUCTION FROM A BIBLICAL PERSPECTIVE

TEACHER'S MANUAL

Compiled and edited by J. Parnell McCarter

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The Puritans'Home School Curriculum
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ECONOMICS, AN INTRODUCTION
FROM A BIBLICAL PERSPECTIVE
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SECTION ONE: COURSE INSTRUCTIONS

Purpose

This course provides students the opportunity to learn introductory economics from a reformed Christian perspective.

Books Required

There are two books required for this course, in addition to this teacher's manual:

- *ECONOMICS, AN INTRODUCTION FROM A BIBLICAL PERSPECTIVE STUDENT TEXTBOOK* (available free on-line at www.puritans.net)
- *ECONOMICS, AN INTRODUCTION FROM A BIBLICAL PERSPECTIVE STUDENT WORKBOOK* (available free on-line at www.puritans.net)

Check-Off List

Grades for each student for the course should be recorded on the check-off list in this teacher's manual.

Assignments

This course consists of 20 assignments, presented in this teacher's manual.

Final Exam

This course includes a final exam, presented in this teacher's manual.

Grading

The overall course grade is calculated based on the weighted-average scores of the assignments and final exam.

SECTION TWO: COURSE CHECK-OFF LIST

ECONOMICS, AN INTRODUCTION FROM A BIBLICAL PERSPECTIVE

Student Name: ____

Teacher Name: ____

Assignment Check-Off List

ASSIGNMENT #	ASSIGNMENT COMPLETED? (X)	ASSIGNMENT SCORE (On 100-Point Scale)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Total of Scores on 20 Assignments		
Average Assignment Score (Total of Scores/20)		

Final Exam Check-Off List

FINAL EXAM	**TEST TAKEN? (X)**	**SCORE *(On 100-Point Scale)***
Reviews all Assignments		

Course Grade Calculation Table

	SCORE	**WEIGHT**	**WEIGHTED-AVERAGE SCORE**
Assignments		60%	
Final Exam		40%	
Course Grade on 100-Point Scale			

Course Grade (Letter Grade Equivalent of Course Grade on 100-Point Scale): ____

Note: Grading in this course should be done on a 100-point scale, with letter grades assigned as follows:

Letter Grade	**Score on 100-Point Scale**	**Score on 4.0 Scale**
A+	97 – 100	4.0
A	94 – 96	4.0
A-	90 – 93	4.0
B+	87 – 89	3.0
B	84 – 86	3.0
B-	80 – 83	3.0
C+	77 – 79	2.0
C	74 – 76	2.0
C-	70 – 73	2.0
D	60 – 69	1.0
F	0 – 59	0

In order to determine how many points each question in a test is worth, divide 100 by the number of questions in the test. For example, if there are 10 questions in a test, then each question is worth 10 points (= 100 / 10). So if a student got 9 out of the 10 questions right, then his test score is 90 (= 9 x 10) on a 100-point scale. His letter grade, according to the table above, would then be an A-.

We supply in the above table the corresponding grade on a 4.0 scale.

SECTION THREE: ASSIGNMENTS

ASSIGNMENT FOR CHAPTER 1

1. How does *The American Heritage® Dictionary of the English Language, Fourth Edition* define ‘economics’?

2. What is the pre-condition for human knowledge (including economics)?

3. Where do we read God’s norm for humans and human society?

4. What is the fundamental reason economic enterprise is not blessed and ideal?

5. To what extent is the judicial law given to the Israelites during Moses’ time authoritative today?

ASSIGNMENT FOR CHAPTER 2

1. There are economic laws, just as there are physical laws. How does the definition of 'law' itself imply a Sovereign Creator and Sustainer?

2. How then is the existence of economic laws contrary to the naturalistic worldview?

3. Which of the Ten Commandments is peculiarly pertinent to the topic of economics?

4. Cite 3 examples of sins forbidden in that Commandment which relate to economics.

5. To promote economic prosperity, what ought a civil magistrate do?

6. Based upon scripture, what should we think of a society that tolerates fraud, letting it go unpunished?

7. What does Leviticus 19:13 teach concerning payment of wages of poor hired laborers?

8. To which Old Testament passage did the Apostle Paul quote that declares that the laborer should not be defrauded of his just hire?

9. What does the phrase "just balances, just weights" mean in Leviticus 19:36 according to Dr. John Calvin?

10. What does the Fourth Commandment teach concerning commerce?

11. Why is it foolish to think those who are in rebellion against the God of the Bible can understand even the basics of economics?

12. Summarize what John Calvin believes scripture teaches concerning the charging of interest, based upon his commentary on Leviticus 25:35-38, Deuteronomy 23:19, 20, and Exodus 22:25 relating to the topic (which is found in Appendix A of the student textbook).

ASSIGNMENT FOR CHAPTER 3

1. What does this verse teach about the nature of economic behavior: “Righteousness exalteth a nation, but sin is a reproach to any people “ (Proverbs 14:34)?

2. What does this verse teach about the nature of economic behavior : “He becometh poor that dealeth [with] a slack hand: but the hand of the diligent maketh rich” (Proverbs 10:4)?

3. What does this verse teach about the nature of economic behavior **:** “He that tilleth his land shall be satisfied with bread: but he that followeth vain [persons is] void of understanding” (Proverbs 12:11)?

4. Cite at least one verse that teaches this economic principle: Economic output requires economic input.

5. Cite at least one verse that teaches this economic principle: Those who are lenders long term will rule over those who are borrowers.

6. Cite at least one verse that teaches this economic principle: Those who are wise and knowledgeable will be richly blessed long term.

7. How should we assess the enterprise of those who study economics apart from faith in God’s word?

ASSIGNMENT FOR CHAPTER 4

1. What is ‘induction’?

2. What is ‘deduction’?

3. How is deduction necessary to a right study of economics?

4. How is induction necessary to a right study of economics?

5. How must we use the tool of induction so it is used properly?

6. How can the tool of induction be of use in applying economic principles deducible from scripture?

7. How would you respond to someone who asserted that, based upon his study of American economic history, rising debt levels pose no threat to long term economic prosperity?

8. What is ‘classification’?

ASSIGNMENT FOR CHAPTER 5

1. What are three practical reasons why money is used in commerce?

2. When did the U.S. government prove unable to keep the price of gold at $35 and thus let the value of gold relative to the US dollar float freely?

3. What happened to the price of gold in the 1970s?

4. What happened to the price of gold in the 20 years after the 1970s?

5. There are various reasons why gold is a practical medium of exchange. What is meant by this reason: It is durable?

6. There are various reasons why gold is a practical medium of exchange. What is meant by this reason: It is divisible?

7. There are various reasons why gold is a practical medium of exchange. What is meant by this reason: It is convenient?

8. There are various reasons why gold is a practical medium of exchange. What is meant by this reason: It is consistent?

9. There are various reasons why gold is a practical medium of exchange. What is meant by this reason: It has intrinsic value?

10. There are various reasons why gold is a practical medium of exchange. What is meant by this reason: It cannot be created by government?

11. In light of what you have learned in chapter 5, compose a paragraph analyzing the speech in Appendix B of your textbook.

12. A good indicator of which political entity will replace the US as the next world superpower is the entity whose currency is slowly replacing the US dollar as the world's reserve currency. Which currency is that, as suggested in the speech in Appendix B, and which political entity issues that currency?

ASSIGNMENT FOR CHAPTER 6

1. Why is the US dollar called a 'fiat currency'?

2. The Fed uses three tools to set the level of money supply. What are those three tools?

3. How does the Fed's activity of buying and selling government securities (bonds) affect the money supply?

4. The Federal Reserve System uses a number of different measures to quantify the amount of money which exists in the economy. What does M-1 consist of?

5. How much did M-3 change between 1980 and 2005, according to statistics published in 2005 by the Federal Reserve Bank of St. Louis?

6. What is the Consumer Price Index (CPI)?

7. What has been the trend of the CPI over American history?

8. What is the difference between the Producer Price Index (PPI) and the CPI? .

9. What is significant about the year 1972 when comparing the value of the US dollar in relation to the value of gold?

10. What is significant about the year 1972 when comparing the value of the US dollar in relation to the price of oil?

11. Some people have asserted that the rising price of oil (in US dollars) is owing to oil shortages. What do the graphs of the price of gold and oil suggest?

12. One measure of the price of publicly traded stocks is the Dow Jones Industrial Average (DJIA). It takes a "basket" of important publicly traded stocks of different companies (like Exxon, General Motors, IBM, etc.) and measures how the value of their stocks has changed over time. In simply nominal terms (not adjusted for inflation), what has happened to the DJIA over time? .

13. The term "CPI Adjusted Current DJIA" appears in a graph in the textbook. What does "CPI Adjusted Current DJIA" mean?

14. List the harmful effects of inflation.

ASSIGNMENT FOR CHAPTER 7

1. What are exchange rates?

2. Why is there exchange rate fluctuation among fiat currencies, unless governments intervene?

3. What does the ‘depreciation’ of a currency mean?

4. What does it mean for a country to have a trade deficit?

5. What is a “debtor nation”?

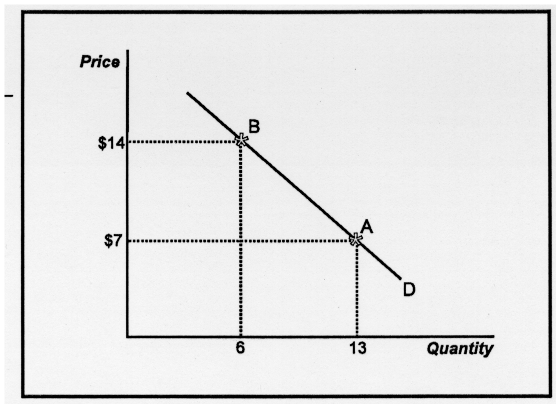
6. What does the capital account measure?

ASSIGNMENT FOR CHAPTER 8

1. What does "ceterus paribus" mean?

2. What does the law of demand state?

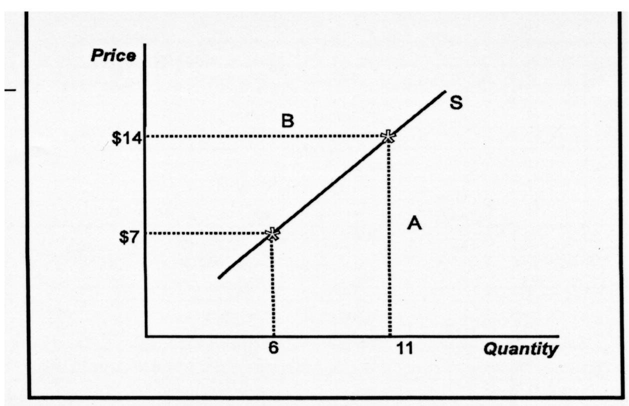
3. A demand curve of a certain commodity is graphed below:



According to the graph, what do we know about the quantity demanded of the commodity if it were sold at $5 each?

4. What does the law of supply state?

5. A supply curve of a certain commodity is graphed below:



According to the graph, what do we know about the quantity supplied of the commodity if it were sold at $10 each?

6. What is meant by 'equilibrium price' with respect to supply and demand?

7. What is meant by 'shortage' with respect to supply and demand?

8. What is meant by ‘surplus’ with respect to supply and demand?

9. The demand schedule (curve) does not always stay in the same position. What are reasons why it may change?

10. Supply shifts as a result of supply determinants. What are five reasons why firms may supply more of a product?

ASSIGNMENT FOR CHAPTER 9

1. Some goods and services respond much more sharply to price changes than other goods and services. Those whose quantity demanded is sharply affected by price changes are said to be what?

2. Define price elasticity of demand.

3. What are three determinants of price elasticity of demand?

4. Define income elasticity of demand.

5. Why are some products classified as “inferior goods” by economists (as opposed to “normal goods”)?

ASSIGNMENT FOR CHAPTER 10

1. What is a production function?

2. What is the Law of Diminishing Marginal Product?

3. In economic terms, what is the "short run"?

4. What is marginal utility?

5. What is the Law of Diminishing Marginal Utility?

6. Is the Law of Diminishing Marginal Utility true of everything? If not, of what is it not true?

ASSIGNMENT FOR CHAPTER 11

1. Should we look at material riches as being permanent?

2. What is one example of a nation in history which went “from rags to riches”?

3. What is one example of a nation in history which went “from riches to rags”?

4. Who is one example of a person in history who went “from rags to riches”?

5. What moral lesson did Jesus Christ drive home concerning the temporality of riches in His Sermon on the Mount?

ASSIGNMENT FOR CHAPTER 12

1. What is 'perfect competition'?

2. What is 'monopolistic competition'? .

3. What is an 'oligopoly market'?

4. What is a 'monopoly market'?

5. What is an example of purely competitive industry?

6. What are some ways firms, small or large, differentiate themselves from other firms?

7. What is price fixing?

ASSIGNMENT FOR CHAPTER 13

1. What is a sole proprietorship?

2. What is a partnership?

3. What are the two most salient features of incorporation?

4. Which two states, as early as 1817, had moved towards chartering corporations with limited liability?

5. What does ‘liquidity’ mean in the context of investing?

6. What are some arguments that have been advanced in defense of corporations?

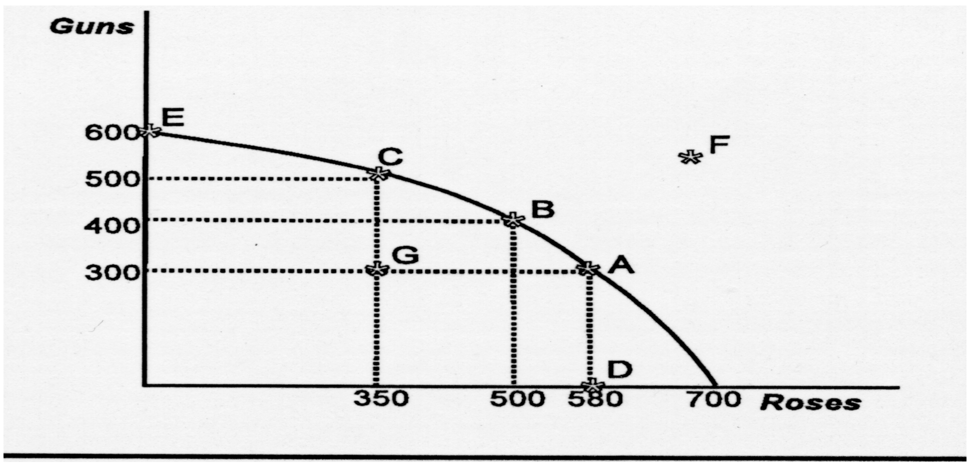
7. What are some arguments that have been advanced against corporations?

8. What is a limited liability company (LLC)?

ASSIGNMENT FOR CHAPTER 14

1. What does a production possibilities curve show?

2. The graph below is a production possibilities curve:



If a society with a production possibilities curve as shown above chose to produce 600 guns in the given period, how many roses could it produce?

3. In many nations of the world there is a vigorous "guns versus butter" debate. What do you think is the nature of that debate, and the arguments made by both sides?

4. When economists discuss the concept of "scarcity", what do they mean?

5. What is opportunity cost?

6. How is economic growth visually illustrated on a production possibilities curve?

7. Is a given production possibilities curve applicable for the short run or the long run?

ASSIGNMENT FOR CHAPTER 15

1. President Johnson said: "Because it is right, because it is wise, and because, for the first time in our history, it is possible to conquer poverty, I submit, for the consideration of the Congress and the country, the Economic Opportunity Act of 1964." What does the Bible teach about this pronouncement?

2. What does a "Lorenz Curve" show?

3. What is a progressive tax?

4. What is a regressive tax?

5. What is unemployment compensation?

6. The causes of poverty can be classified under two main categories: those which relate to personal sin and those which do not relate to personal sin. Scripturally speaking, what ought to be done to address personal sin which results in poverty?

7. Scripturally speaking, what ought to be done to address poverty which does not result from personal sin?

ASSIGNMENT FOR CHAPTER 16

1. What is a business cycle?

2. What is Gross Domestic Product (GDP)?

3. What is per capita GDP?

4. The term ‘investment’ for purposes of calculating GDP means something different from what it means in common parlance. What does it mean for purposes of calculating GDP?

5. What is frictional unemployment?

6. What is structural unemployment?

7. What is cyclical unemployment?

8. What is seasonal unemployment?

9. How do economists define full employment?

10. What is Keynesian economics?

11. What do classical and neo-classical economists argue is the most significant culprit of severe business fluctuations?

12. What does the Bible suggest is the major culprit in causing severe business fluctuations?

13. Let’s suppose that a country produces only two commodities: apples and oranges. 200 apples are produced at $5 each and 100 oranges are produced at $3 each. What is nominal GDP?

14. Suppose next year the economy experiences some inflation and finds that apples are priced at $15 and oranges sell for $9, but still the same quantities are produced. How much are nominal and real GDP in this year?

15. Let’s suppose now that production does change from year one and prices triple as in the previous example (prices are still at $15 and $9 in the new year). Assume production dropped form 200 apples to 100 and oranges from 100 to 50. What are the values for nominal and real GDP?

ASSIGNMENT FOR CHAPTER 17

1. What is fractional reserve banking?

2. What is a T-account?

3. What are required reserves?

4. What are excess reserves?

5. Mathematically, how can the increase in the money supply caused by fractional reserve banking be calculated, if one knows the required reserve?

6. Suppose a bank with the following financial status has lent out as much money as it can within required reserve rules:

BANK			
Assets		***Liabilities***	
Total Reserves	$160	Demand Deposits	$800
Loans	$640		

What is the required reserve ratio implied by this case?

7. If the government required a 100% reserve of money deposited with banks, what would be some likely consequences?

ASSIGNMENT FOR CHAPTER 18

1. What do most (secular) economists mean when they speak of ‘standard of living’?
2. What is the most common way (secular) economists measure standard of living?
3. How would scripture suggest we should measure standard of living?

ASSIGNMENT FOR CHAPTER 19

1. What is a Marxist economic model?

2. Marxism is highly critical of capitalism, arguing that a capitalist society is divided into which two powerful social classes?

3. What is socialism?

4. What is a 'mixed economy'?

5. What is pure capitalism?

6. What is fiscal policy?

7. What is the single largest expenditure by state and local governments?

8. What is the budget deficit?

9. What is the national debt?

10. Monetary policy is the central government's attempt to change economic activity by controlling how much money circulates in the economy and what that money is worth. Which entity sets and implements monetary policy in the US?

ASSIGNMENT FOR CHAPTER 20

1. Economic thought may be roughly divided into which three phases?

2. Which movement separates the pre-modern era from the modern era?

3. What is mercantilism?

4. What was the economic perspective of the French Physiocrats as represented by its leaders like Francois Quesnay?

5. What does *laissez faire* literally mean?

6. With which economic system is *laissez faire* economics closely associated?

7. Which book of Adam Smith's, published in 1776, is generally regarded as establishing modern economics?

8. Adam Smith was both a product of the Scottish Enlightenment as well as a leading figure of it. Smith attended the University of Glasgow, studying moral philosophy, under tutelage of Francis Hutcheson. Hutcheson had been a student at Glasgow under which Professor of Divinity who has been described as the founder of the Scottish Enlightenment, and whose teaching did much to introduce the "New Light" theology into Scotland?

9. Most Christians today have a high regard for Adam Smith. Do you think this is justified? Why or why not?

10. What was the thesis of Robert Malthus' *Essay on Population* (1798)?

11. What are some flaws of his thesis and why?

12. What was David Ricardo's theory of comparative advantage?

13. What was Ricardo's "iron law of wages" ?

14. The Frenchman Jean-Baptiste Say was a famous classical economist. His most famous work was *Treatise on Political Economy*. What was "Say's Law", which is presented in his book?

15. Who wrote *Das Kapital*, which served as the philosophical foundation for communism?

16. To which economist goes credit for the concept of price-elasticity of demand, which was studied in an earlier chapter of the textbook?

17. How would you summarize neo-classical economics?

18. Which economist became an influential exponent of the importance of central banking and government involvement in economic affairs in his book *The General Theory of Employment, Interest and Money* (1936)?

19. What are the fundamental flaws of modern humanistic economic schools of thought?

SECTION FOUR: ASSIGNMENT ANSWERS

ASSIGNMENT FOR CHAPTER 1

1. How does *The American Heritage® Dictionary of the English Language, Fourth Edition* define 'economics'? in this way: "the social science that deals with the production, distribution, and consumption of goods and services and with the theory and management of economies or economic systems"

2. What is the pre-condition for human knowledge (including economics)? God's revelation to man is the pre-condition for human knowledge.

3. Where do we read God's norm for humans and human society? the Ten Commandments

4. What is the fundamental reason economic enterprise is not blessed and ideal? sin

5. To what extent is the judicial law given to the Israelites during Moses' time authoritative today? They expired together with the State of that people; not obliging under any now, further than the general equity thereof may require.

ASSIGNMENT FOR CHAPTER 2

1. There are economic laws, just as there are physical laws. How does the definition of 'law' itself imply a Sovereign Creator and Sustainer? As the Webster's Ninth New Collegiate Dictionary so eloquently expresses, "Law implies imposition by a sovereign authority and the obligation of obedience on the part of all subject to that authority." So the very notion of 'laws' governing how things behave presumes an intelligent Governor of the universe who ordinarily governs according to those laws and who will judge infractions of those laws.

2. How then is the existence of economic laws contrary to the naturalistic worldview? The naturalistic worldview of Darwinian evolutionary theory reduces all ontological reality down to the level of the material, and asserts that all that really exists are physical objects behaving according to chance reactions. If consistently applied, there would be no room for 'general [natural] laws' in such a worldview. In addition, if there is no omniscient, revelatory God, how can there be 'knowledge' and 'truth', if all that exists is finite and fallible. 'Truth' is that which is known for certain, but without an omniscient, revelatory God, man can know *nothing* for certain. Even that which a finite, fallible being thinks he knows is subject to error, so without an omniscient God, 'truth' is an unattainable, irrelevant concept. And without a revelatory God, man can have no true knowledge, for there is no sure foundation for knowing truth for man. And if 'knowledge', 'truth', and 'general [natural] laws' are not possible for man, then neither can 'science' be – whether a natural or social science - according to the standard definition of 'science' found in the Webster's Dictionary. There can be no 'science' without laws and knowledge, but there can be no laws and knowledge without the sovereign God who has revealed Himself to man.

3. Which of the Ten Commandments is peculiarly pertinent to the topic of economics? 8^{th}

4. Cite 3 examples of sins forbidden in that Commandment which relate to economics.

The sins forbidden in the eighth commandment, besides the neglect of the duties required,are, theft, robbery, man-stealing, and receiving any thing that is stolen; fraudulent dealing, false weights and measures, removing landmarks, injustice and unfaithfulness in contracts between man and man, or in matters of trust; oppression, extortion, usury, bribery, vexatious lawsuits, unjust inclosures and depopulations; ingrossing commodities to enhance the price; unlawful callings, and all other unjust or sinful ways of taking or withholding from our neighbour what belongs to him, or of enriching ourselves; covetousness; inordinate prizing and affecting worldly goods; distrustful and distracting cares and studies in getting, keeping, and using them; envying at the prosperity of others; as likewise idleness, prodigality, wasteful gaming; and all other ways whereby we do unduly prejudice our own outward estate, and defrauding ourselves of the due use and comfort of that estate which God hath given us.

5. To promote economic prosperity, what ought a civil magistrate do? punish evil doers

6. Based upon scripture, what should we think of a society that tolerates fraud, letting it go unpunished? We should regard it as wrong.

7. What does Leviticus 19:13 teach concerning payment of wages of poor hired laborers? When a person, who has hired himself as a laborer, is defrauded of his wages, and not only if he be sent away without payment, his wages being denied him, but if payment be deferred to the morrow. For we know that hirelings generally live from hand to mouth, and therefore, if there be ever so little delay, they must go without food. Consequently, if a rich man keeps a poor and wretched individual, whose labor he has abused, in suspense, he deprives him as it were of life, in depriving him of his daily food.

8. To which Old Testament passage did the Apostle Paul quote that declares that the laborer should not be defrauded of his just hire? Deuteronomy 25:4

9. What does the phrase “just balances, just weights” mean in Leviticus 19:36 according to Dr. John Calvin? falsifying the standard measures of wine or corn, or anything else

10. What does the Fourth Commandment teach concerning commerce? it prohibits commerce , that is not of the nature of mercy or necessity, on the Lord’s Day

11. Why is it foolish to think those who are in rebellion against the God of the Bible can understand even the basics of economics? because we must understand scripture if we are to understand how commerce should be conducted

12. Summarize what John Calvin believes scripture teaches concerning the charging of interest, based upon his commentary on Leviticus 25:35-38, Deuteronomy 23:19, 20, and Exodus 22:25 relating to the topic (which is found in Appendix A of the student textbook).

ASSIGNMENT FOR CHAPTER 3

1. What does this verse teach about the nature of economic behavior: “Righteousness exalteth a nation, but sin is a reproach to any people “ (Proverbs 14:34)? This law of how things work teaches that righteousness (i.e., conformity to the Ten Commandments) tends to blessed long term prosperity, including economic prosperity, while transgression of the Ten Commandments tends toward ruin.

2. What does this verse teach about the nature of economic behavior : “He becometh poor that dealeth [with] a slack hand: but the hand of the diligent maketh rich” (Proverbs 10:4)? It teaches the economic principle that there is a cause-and-effect relationship between the diligence of a person or people and the economic prosperity of that person or people.

3. What does this verse teach about the nature of economic behavior **:** “He that tilleth his land shall be satisfied with bread: but he that followeth vain [persons is] void of understanding” (Proverbs 12:11)? Diligence in one’s vocational labors leads to economic satisfaction, unlike those who waste their time in bad company.

4. Cite at least one verse that teaches this economic principle: Economic output requires economic input. “Where no oxen [are], the crib [is] clean: but much increase [is] by the strength of the ox.” (Proverbs 14:4)

5. Cite at least one verse that teaches this economic principle: Those who are lenders long term will rule over those who are borrowers. “The rich ruleth over the poor, and the borrower [is] servant to the lender.” (Proverbs 22:7)

6. Cite at least one verse that teaches this economic principle: Those who are wise and knowledgeable will be richly blessed long term. “Through wisdom is an house builded; and by understanding it is established: And by knowledge shall the chambers be filled with all precious and pleasant riches.” (Proverbs 24:3-4)

7. How should we assess the enterprise of those who study economics apart from faith in God’s word? It is fatally and utterly flawed. At best such a flawed approach to economics can teach man how “to enjoy the pleasures of sin for a season”. (Hebrews 11:25)

ASSIGNMENT FOR CHAPTER 4

1. What is ‘induction’? By induction we mean inferring a generalized conclusion from particular instances.

2. What is ‘deduction’? conclusions about particulars can necessarily be inferred from general or universal premises

3. How is deduction necessary to a right study of economics? deducing specific applications based upon general Biblical principles

4. How is induction necessary to a right study of economics? We can and ought to make inductions concerning economic principles, based upon observation of human behavior historically.

5. How must we use the tool of induction so it is used properly? Propriety in this context is defined as those conclusions which can be gathered by induction from sufficient and valid historical human experience, are consistent with the word of God, and reflect cause-and-effect and not merely coincidental correlation.

6. How can the tool of induction be of use in applying economic principles deducible from scripture? they suggest how we should apply general principles in specific situations

7. How would you respond to someone who asserted that, based upon his study of American economic history, rising debt levels pose no threat to long term economic prosperity? Such a conclusion would be ill-founded because it contradicted scriptural precept concerning debt and because it based its findings on too short term data

8. What is ‘classification’? Classification is the systematic arrangement into classes or groups of that which is observed.

ASSIGNMENT FOR CHAPTER 5

1. What are three practical reasons why money is used in commerce? First, it is used as a medium of exchange. Instead of exchanging a hair cut for gasoline directly (called barter), a barber can get money from a customer for giving the haircut and use the money to buy gasoline at a fill-in station down the street. It saves the barber from having to find someone who needs a haircut and sells gasoline. Money, in this sense, encourages and speeds up trade. Second, it is a standard of value. How many gallons of gas is one haircut worth? Without money it is difficult to reach an agreement every time you enter into a trade like that. Money allows us to put values on the goods and services we sell. Finally, it is a store of value. By exchanging goods and services for money, one can accumulate money and increase wealth. Without money, a surplus of gasoline at the barber's residence could create a fire hazard. It would be of diminishing worth as it accumulated there. But storing money is far more practical.

2. When did the U.S. government prove unable to keep the price of gold at $35 and thus let the value of gold relative to the US dollar float freely? 1971

3. What happened to the price of gold in the 1970s? shot up dramatically

4. What happened to the price of gold in the 20 years after the 1970s? went through a bear market

5. There are various reasons why gold is a practical medium of exchange. What is meant by this reason: It is durable? It won't evaporate, mildew, rust, crumble, break, or rot. Gold, more than any other solid element, is chemically inert. This is why foodstuffs, oil or artwork can't be used as money.

6. There are various reasons why gold is a practical medium of exchange. What is meant by this reason: It is divisible? One ounce of gold—whether bullion, coin, or dust—is worth exactly 1/100th of one hundred ounces. When a diamond is split, its value may be destroyed. You can't make change for a piece of land.

7. There are various reasons why gold is a practical medium of exchange. What is meant by this reason: It is convenient? Gold allows its owner physically to carry the wealth of a lifetime with him

8. There are various reasons why gold is a practical medium of exchange. What is meant by this reason: It is consistent? Only one grade exists for 24-carat gold, so there is no danger of owning 24-carat gold varying in quality. Twenty-four-carat gold (pure gold) is the same in every time and place since gold is a natural element, unlike gems, artwork, land, grain, or other commodities.

9. There are various reasons why gold is a practical medium of exchange. What is meant by this reason: It has intrinsic value? Gold finds new industrial uses each year. Of all the metals, it is the most malleable (able to be hammered into sheets less than 5-millionths of an inch thick), most ductile (a single ounce can be drawn into a wire 35 miles long), and the least reactive (it can stand

indefinite immersion in seawater, does not tarnish in air, and can withstand almost any acid). Next to silver, it's the most conductive of heat and electricity and the most reflective of light.

10. There are various reasons why gold is a practical medium of exchange. What is meant by this reason: It cannot be created by government? Gold can, of course, be debased with impurities or falsified in weight, and governments strapped for revenue have tried those tricks. But a trader can protect himself with a pair of scales or a vial of acid, although a familiar and trustworthy hallmark of a coin saves him that trouble. Unlike currency, gold cannot lose value because of government mismanagement. On the contrary, it tends to gain value because of government mismanagement.

11. In light of what you have learned in chapter 5, compose a paragraph analyzing the speech in Appendix B of your textbook.

12. A good indicator of which political entity will replace the US as the next world superpower is the entity whose currency is slowly replacing the US dollar as the world's reserve currency. Which currency is that, as suggested in the speech in Appendix B, and which political entity issues that currency? the Euro of the European Union

ASSIGNMENT FOR CHAPTER 6

1. Why is the US dollar called a 'fiat currency'? The US government, like virtually every other modern country, mandates by fiat that people in the US accept government-created US dollars in payment of debts. It has to do this by fiat, because without such government order the US dollars would be worthless.

2. The Fed uses three tools to set the level of money supply. What are those three tools? Of the three methods the Fed applies to change reserves in the economy, open market operations is the most important and most frequently used. The term refers to the Fed's activity of buying and selling government securities (bonds). A second tool it employs is the reserve requirement. A third tool it employs is the discount rate.

3. How does the Fed's activity of buying and selling government securities (bonds) affect the money supply?). Bonds are pieces of paper (certificates) which are proof that you have lent money to someone. Government bonds are first issued by Congress and the White House to help finance expenses for federal government services and goods (like defense and social security). The Fed does not issue these bonds, but only trades them to affect the money supply. To put more money into circulation, the Fed buys bonds from people, businesses or banks who hold them. These groups would receive cash in exchange for the bond, which puts funds in circulation and increases the money supply. The reverse occurs when the Fed sells bonds. This takes funds out of circulation and decreases the money supply.

4. The Federal Reserve System uses a number of different measures to quantify the amount of money which exists in the economy. What does M-1 consist of? M-1 includes all coins and currency in circulation with the public, plus money in checking or transactions accounts (demand deposits, NOW accounts, etc.), plus traveler's checks. These forms of money are used to directly purchase goods and services.

5. How much did M-3 change between 1980 and 2005, according to statistics published in 2005 by the Federal Reserve Bank of St. Louis? went from 2000 billion to 10000 billion

6. What is the Consumer Price Index (CPI)? This figure is a weighted average price of a typical "basket" of consumer goods and services. The term "weighted" means that price increases of goods that are bought in large quantities increase the CPI more than goods which are not consumed as commonly.

7. What has been the trend of the CPI over American history? It has been rising, especially since the US dollar has no longer been tied to gold and silver.

8. What is the difference between the Producer Price Index (PPI) and the CPI? The PPI is similar to the CPI, but changes in (wholesale) prices which businesses, not consumers, must pay are measured.

9. What is significant about the year 1972 when comparing the value of the US dollar in relation to the value of gold? Starting in 1972, the value of the dollar has declined relative to the dollar (and gold has risen in value relative to the dollar), because the value of the dollar was no longer tied to that of gold.

10. What is significant about the year 1972 when comparing the value of the US dollar in relation to the price of oil? the price of oil started dramatically increasing then

11. Some people have asserted that the rising price of oil (in US dollars) is owing to oil shortages. What do the graphs of the price of gold and oil suggest? that it is rather due to the inflation of the dollar

12. One measure of the price of publicly traded stocks is the Dow Jones Industrial Average (DJIA). It takes a "basket" of important publicly traded stocks of different companies (like Exxon, General Motors, IBM, etc.) and measures how the value of their stocks has changed over time. In simply nominal terms (not adjusted for inflation), what has happened to the DJIA over time? It has risen dramatically.

13. The term "CPI Adjusted Current DJIA" appears in a graph in the textbook. What does "CPI Adjusted Current DJIA" mean? It adjusts the nominal DJIA value for the effects of inflation, as measured by the CPI.

14. List the harmful effects of inflation.

A. Inflation leads to malinvestments. When prices rise, certain investments go up faster as compared to when prices are stable. For instance, prices of real estate and antiques rise faster if there is inflation. More money is invested in these goods therefore as compared to when there is no inflation. However, putting our borrowed money or savings into these non-producing types of commodities is not the most efficient way to increase the country's wealth. Higher inflation which causes prices of housing to rise may help real estate owners increase their wealth, but it encourages money to flow into ventures which otherwise would not have been as attractive. Instead of funds flowing into ventures which produce additional wealth, it is being invested in consumption items which do not add to the country's productive capacity. In addition, current buyers of property suffer. Current buyers pay for inflated houses and other inflated commodities. Some workers who could afford to purchase a house ten or fifteen years ago, can no longer do so.

B. Inflation encourages consumption instead of saving. Higher prices induce people to purchase more products now (before they become more expensive) and discourage people from saving, because money saved for future use will have less value. Too much consumption discourages savings needed for investments in capital goods and technology, the real causes of wealth in our economy.

C. Inflation leads to higher interest rates in the long run. Initially when the government increases the money supply, the increased availability of money may lower interest rates. However, the higher prices and lower value of the money leads banks and other financial institutions to raise rates in order to compensate for the loss of the purchasing power of their funds. Higher long term rates discourages business borrowing, which leads to less investment in capital goods and technology.

D. Higher prices of goods means that other countries will find it less attractive to purchase our goods. This will lead to a decline in exports and lower production and higher unemployment in our country.

E. Higher prices lead to increases in taxes. Nominal (not real) incomes rise along with inflation and push income earners into higher percentage tax brackets. So even though purchasing power does not increase, a person pays a bigger chunk to the government.

F. When the government finances its expenditures at least in part by printing more money, it acquires these funds "for free" (of course, it is not free to citizens who will be faced with significantly higher prices on goods and services later on). However, to the public it initially appears that these funds have been acquired without too much sacrifice. This encourages the public to accept the government programs more than if it had to pay taxes to finance them. This malinvestment is a very serious form of inefficiency in our society.

G. Government-created inflation is immoral, because it is a form of theft.

ASSIGNMENT FOR CHAPTER 7

1. What are exchange rates? Exchange rates are nothing more than prices buyers face for purchasing foreign currency, similar to a price a buyer faces for purchasing a commodity like a car.

2. Why is there exchange rate fluctuation among fiat currencies, unless governments intervene?

Prices (rates) of currencies relative to other foreign currencies fluctuate according to their demand and supply relative to the demand and supply of other foreign currencies. For instance, if the United States government supplies many more dollars than the Japanese government supplies Yen to the world economy, then there would be an increase in the relative supply of dollars and a decrease in the relative supply of Yen.

3. What does the 'depreciation' of a currency mean? the price (value) of one currency falls relative to another

4. What does it mean for a country to have a trade deficit? If a country imports more than it exports in this category, then it is said to have a trade deficit.

5. What is a "debtor nation"? A negative balance on the current account means that the country is considered a "debtor nation."

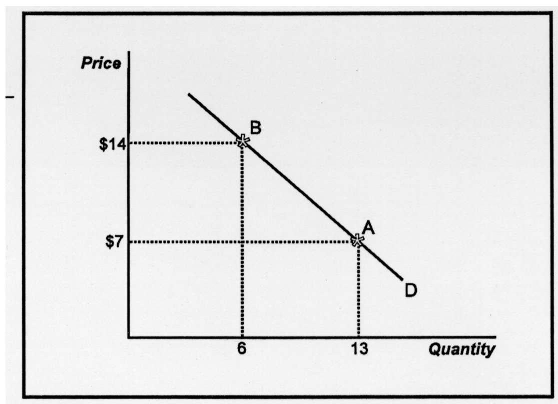
6. What does the capital account measure? The capital account includes a variety of sub-accounts all dealing with purchases and sales of financial assets or real estate (stocks, bonds, land, buildings, businesses, etc.). Additionally, a central bank's trade in foreign exchange (Japanese yen, Brazilian reals, etc.) is also a flow of money which is reflected in the capital account.

ASSIGNMENT FOR CHAPTER 8

1. What does "ceterus paribus" mean? "assuming other relevant variables remain constant."

2. What does the law of demand state? The law of demand states that buyers of a good will purchase more of the good if its price is lower (and vice versa).

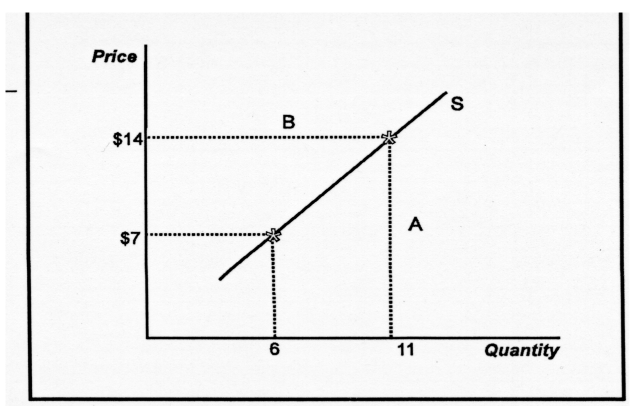
3. A demand curve of a certain commodity is graphed below:



According to the graph, what do we know about the quantity demanded of the commodity if it were sold at $5 each? that more than 13 would be demanded by consumers

4. What does the law of supply state? that product suppliers (firms) offer more of a product at higher than at lower prices (just the opposite of the law of demand).

5. A supply curve of a certain commodity is graphed below:



According to the graph, what do we know about the quantity supplied of the commodity if it were sold at $10 each? that more than 6 and less than 11 would be supplied by suppliers

6. What is meant by ‘equilibrium price’ with respect to supply and demand? the price at which the quantity supplied equals the quantity demanded (so in a free market (competitive and with no government involvement) the equilibrium price and quantity occur where the supply and demand curves intersect)

7. What is meant by ‘shortage’ with respect to supply and demand? At the equilibrium price consumers are willing to buy the same amount which businesses are willing to offer. If the price were below this intersection point, a shortage would exist. If the price were above equilibrium, we would experience a surplus.

8. What is meant by ‘surplus’ with respect to supply and demand? At the equilibrium price consumers are willing to buy the same amount which businesses are willing to offer. If the price were above equilibrium, we would experience a surplus.

9. The demand schedule (curve) does not always stay in the same position. What are reasons why it may change?

a. A change in buyers’ incomes and wealth.

b. Buyers’ religion, and personal tastes and preferences.

c. The prices of related products or services.

d. Buyers’ expectation of the product’s future price.

e. The number of buyers (population).

10. Supply shifts as a result of supply determinants. What are five reasons why firms may supply more of a product?

a. Advance in technology.

b. Prices of inputs necessary to make the product.

c. Taxes and subsidies.

d. The number of firms selling the product.

e. The moral righteousness of workers

ASSIGNMENT FOR CHAPTER 9

1. Some goods and services respond much more sharply to price changes than other goods and services. Those whose quantity demanded is sharply affected by price changes are said to be what? highly price elastic

2. Define price elasticity of demand.

the percentage change in quantity demanded divided by the percentage change in the price of the product

3. What are three determinants of price elasticity of demand?

1. **The availability of close substitutes**. If a product has many close substitutes, for example a certain brand of cereal, then people tend to react strongly to a price increase, i.e. the price elasticity of this product is high.
2. **The importance of the product's cost in one's budget**. If a product is very inexpensive, such as salt, consumers could care less whether the price of salt goes up by 10, 20, or even 50%. Salt therefore has a very low price elasticity of demand.
3. **The period of time under consideration**. If you're looking at the demand for gasoline over only one day, people will react less strongly to a price increase than if you studied the effect of a price increase in gasoline over a period of two years. This is because people have much more time to adjust their consumption in two years than in one day. Over the course of two years you have the ability to move closer to work or school; arrange to carpool; buy a more fuel efficient car, etc.

4. Define income elasticity of demand.

Income elasticity of demand measures the change in people's purchase of a product or service as a result of a change in their income.

5. Why are some products classified as "inferior goods" by economists (as opposed to "normal goods")? They have a negative income elasticity of demand.

ASSIGNMENT FOR CHAPTER 10

1. What is a production function? a relationship between inputs and outputs. It illustrates how many workers and machines it might take to produce, for example, one car, two cars, etc.

2. What is the Law of Diminishing Marginal Product? The drop in additional production after a certain number of workers (in this example the third worker)

3. In economic terms, what is the "short run"? a time period in which a business has at least one fixed input (for example, the production space [building] is fixed).

4. What is marginal utility? the additional satisfaction one gets from consuming one more item of a good or service

5. What is the Law of Diminishing Marginal Utility? the more you have of something the less the additional unit is worth to you

6. Is the Law of Diminishing Marginal Utility true of everything? If not, of what is it not true? no, spiritual things

ASSIGNMENT FOR CHAPTER 11

1. Should we look at material riches as being permanent? no

2. What is one example of a nation in history which went “from rags to riches”? Germany

3. What is one example of a nation in history which went “from riches to rags”? Babylon

4. Who is one example of a person in history who went “from rags to riches”? Andrew Carnagie

5. What moral lesson did Jesus Christ drive home concerning the temporality of riches in His Sermon on the Mount?

“Lay not up for yourselves treasures upon earth, where moth and rust doth corrupt, and where thieves break through and steal: But lay up for yourselves treasures in heaven, where neither moth nor rust doth corrupt, and where thieves do not break through nor steal: For where your treasure is, there will your heart be also.“ (Matthew 6:19-21)

ASSIGNMENT FOR CHAPTER 12

1. What is 'perfect competition'? a market structure in which there are many competing firms selling identical products or services.

2. What is 'monopolistic competition'? a market structure in which there are many firms selling slightly differentiated products or services. Yet this market is quite different from the monopoly market, in which there is virtually no real competition.

3. What is an 'oligopoly market'? where a few firms who dominate the industry and one firm's actions is known to very much affect another's.

4. What is a 'monopoly market'? an industry with only one seller. The product which the monopolistic firm sells typically has no close substitutes.

5. What is an example of purely competitive industry? agriculture

6. What are some ways firms, small or large, differentiate themselves from other firms? different ingredients, certainly in the way that they package, name, distribute, or service their products. Advertising is also very common; it benefits the firm because of the greater exposure to a larger market and often benefits the consumer by informing him of the choices available

7. What is price fixing? When firms collude and behave in a monopoly like fashion they will be able to restrict output and charge a higher price. Each firm will see its profits increase in the short run as companies engage in price setting (fixing) and cooperate to keep out competitors

ASSIGNMENT FOR CHAPTER 13

1. What is a sole proprietorship? A sole proprietorship is the simplest form of business organization to start and maintain. It is a business which legally has no separate existence from its owner. The owner receives the benefit of all the profits of the business. All debts of the business are debts of the owner. If the business were to get a judgment filed against it, it would be a problem for the owner. This form of business will have unlimited liability; therefore, if the business is sued, it is the proprietor's problem. And it is a "sole" proprietorship in the sense that the owner has no partners.

2. What is a partnership? A partnership is a type of business entity in which partners share with each other the profits or losses of the business undertaking in which they have all invested. In a partnership, the partners are held financially liable for the business transactions of the partnership.

3. What are the two most salient features of incorporation?

a. *Limited Liability*. Unlike in a partnership or sole proprietorship, owners of a corporation (generally called shareholders) hold no liability for the corporation's debts and obligations. As a result, their "limited" potential losses cannot exceed the amount which they contributed to the corporation as dues or paid for shares.
b. *Perpetual Lifetime*. The assets and structure of the corporation exist beyond the lifetime of any of its owners or agents. This allows for stability and accumulation of capital, which thus becomes available for investment in projects of a larger size and over a longer term than if the corporate assets remained subject to dissolution and distribution.

4. Which two states, as early as 1817, had moved towards chartering corporations with limited liability? Connecticut and Massachusetts

5. What does 'liquidity' mean in the context of investing? ease of buying and selling of ownership interest

6. What are some arguments that have been advanced in defense of corporations?

Various arguments have been advanced in defense of corporations, and specifically their controversial limited liability feature. One argument is that it allows the raising of funds for riskier enterprises by removing risks and costs from the owners and shifting them onto creditors and to other members of society, thereby creating an externality. Another rationale sometimes offered for limited liability is that reducing the amount that an investor can lose reduces the time and effort required to determine whether a stock is risky, thus adding liquidity to the stock market - in contrast to the very illiquid market for partnership interests.

7. What are some arguments that have been advanced against corporations?

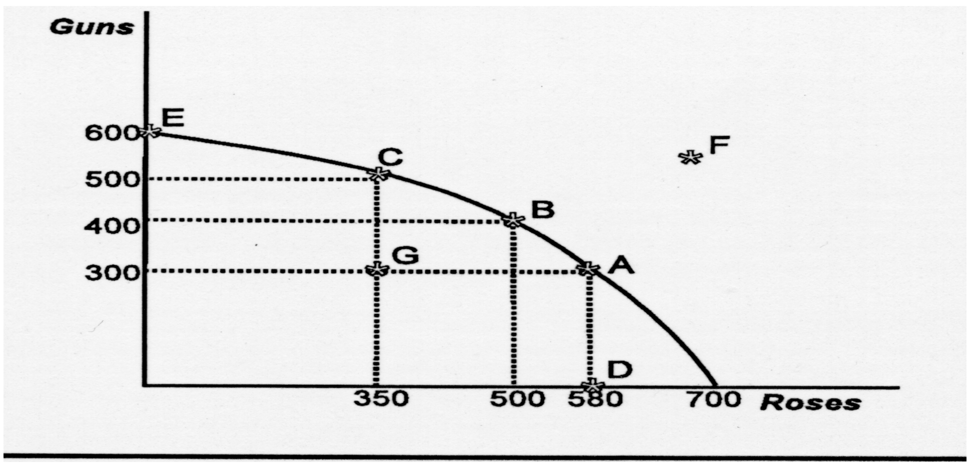
The level of unaccountability afforded to corporate owners has tended to remove very important brakes against immorality. Unaccountability breeds irresponsibility and a culture where the quest for profits is the over-riding concern. Various Biblical verses indicate that moral propriety demands that the owner (in this case of an ox, but applicable to a whole host of cases besides [see I Corinthians for how broadly case law should be applied]) be held fully accountable for that which he owns.

8. What is a limited liability company (LLC)? An LLC is a hybrid between a partnership and a Corporation in that it combines certain tax advantages of a partnership with the limited liability accorded to corporate shareholders.

ASSIGNMENT FOR CHAPTER 14

1. What does a production possibilities curve show? Limitation of resources and the outputs they can produce can be graphically represented in what is called a production possibilities curve. A production possibilities curve represents outcome or production combinations that can be produced with a given amount of resources.

2. The graph below is a production possibilities curve:



If a society with a production possibilities curve as shown above chose to produce 600 guns in the given period, how many roses could it produce? 0

3. In many nations of the world there is a vigorous "guns versus butter" debate. What do you think is the nature of that debate, and the arguments made by both sides? It is a debate on how much the nation should spend for national defense. Pro-guns argue for the importance of safety and security, whereas the pro-butter argue that more should be spent on the material well-being of the citizens.

4. When economists discuss the concept of "scarcity", what do they mean? They refer to the economic reality that resources are limited and that at any given point in time, output is limited.

5. What is opportunity cost? Opportunity cost is the cost of something in terms of an opportunity forgone (and the benefits that could be received from that opportunity), or the most valuable forgone alternative.

6. How is economic growth visually illustrated on a production possibilities curve? by an outward shift of

7. Is a given production possibilities curve applicable for the short run or the long run? short run

ASSIGNMENT FOR CHAPTER 15

1. President Johnson said: “Because it is right, because it is wise, and because, for the first time in our history, it is possible to conquer poverty, I submit, for the consideration of the Congress and the country, the Economic Opportunity Act of 1964.” What does the Bible teach about this pronouncement?

Those who have joined such ill-fated movements would have been wise instead to have heeded these words of the Lord Jesus Christ:

“For ye have the poor with you always, and whensoever ye will ye may do them good…” (Mark 14:7)

2. What does a “Lorenz Curve” show? the extent of economic inequality

3. What is a progressive tax? A progressive tax is one in which you pay a higher tax rate (percentage) as your income goes up.

4. What is a regressive tax? a tax where the low income earner pays a higher rate than the higher income earner.

5. What is unemployment compensation? benefits to people who have lost their job

6. The causes of poverty can be classified under two main categories: those which relate to personal sin and those which do not relate to personal sin. Scripturally speaking, what ought to be done to address personal sin which results in poverty? suppressed and punished by the magistrate

7. Scripturally speaking, what ought to be done to address poverty which does not result from personal sin? such should be aided, to mitigate the effects of poverty

ASSIGNMENT FOR CHAPTER 16

1. What is a business cycle? One full fluctuation, consisting of one recession and one expansion

2. What is Gross Domestic Product (GDP)? the value of the final goods and services produced in a country

3. What is per capita GDP? This is the average value of gross domestic product per individual of a country.

4. The term 'investment' for purposes of calculating GDP means something different from what it means in common parlance. What does it mean for purposes of calculating GDP? Investment means purchases by businesses of machines and equipment. It also includes inventory changes (some goods may have been produced, but not sold; remember that GDP measures production, not sales). (Investment in economics then does ***not*** mean the purchases of financial products, such as stocks and bonds, for purchases of financial products are merely transfers of ownership and do not necessarily represent production.)

5. What is frictional unemployment? People who are in between jobs or students who just got out of school and are looking for a job.

6. What is structural unemployment? People who are laid off because of technology advances or other structural changes in production. Many typists are laid off because of greater computer capabilities. American steel, auto and electronics workers have become structurally unemployed due to foreign competition and American companies locating abroad.

7. What is cyclical unemployment? People who are laid off temporarily due to a decline in the demand for their product. During recessions fewer cars are bought causing automobile workers to be laid off until demand picks back up.

8. What is seasonal unemployment? People who are out of work during the off season: ice cream vendors during the winter; school teachers during the summer (if they are looking for a job during this time; see the definitions in the next objective).

9. How do economists define full employment? as zero cyclical and seasonal unemployment

10. What is Keynesian economics? John Maynard Keynes, an influential twentieth century economist, argued that during good economic times, businesses have a tendency to overproduce. This overproduction stimulates the economy because it creates jobs and higher earnings. However, consumers soon realize that they have over purchased or may be saturated with some products. Consequently, they lower their consumption and cause

businesses to be stuck with unsold products. Faced with increasing inventories, businesses then cut back on production, lay off workers or lower salaries of employed workers. As the government observes this downturn in the economy, it attempts to counter this by "stimulating" the economy. Since it interprets the cause of the downturn to be a cut back in consumption, it increases consumption by raising government expenditures on social programs, social security, and by creating jobs, even inefficient ones, to ensure people of higher earnings. On the flip side, the common Keynesian belief is that an economy with 5% or less unemployment turns inflationary and should be slowed down. This systematic perspective on economics is called Keynesian economics.

11. What do classical and neo-classical economists argue is the most significant culprit of severe business fluctuations? government interference in the economy

12. What does the Bible suggest is the major culprit in causing severe business fluctuations? human sin

13. Let's suppose that a country produces only two commodities: apples and oranges. 200 apples are produced at $5 each and 100 oranges are produced at $3 each. What is nominal GDP? $1300

14. Suppose next year the economy experiences some inflation and finds that apples are priced at $15 and oranges sell for $9, but still the same quantities are produced. How much are nominal and real GDP in this year?

Nominal is $3900 and real (relative to the previous year) is $1300. (no change in production).

15. Let's suppose now that production does change from year one and prices triple as in the previous example (prices are still at $15 and $9 in the new year). Assume production dropped form 200 apples to 100 and oranges from 100 to 50. What are the values for nominal and real GDP?

Nominal GDP is now $1950.-- (100 x $15 plus 50 x $9). Real GDP (relative to the previous year) is $650; production is half of what it was the year before. The $650 can also be computed by taking the nominal in the new year $1950) and dividing it by the price rise from the previous year (3-fold increase). Look for more of these problems in the practice sets.

ASSIGNMENT FOR CHAPTER 17

1. What is fractional reserve banking? a system whereby banks only retain a portion of demand deposits as reserves, and loan out the remainder

2. What is a T-account? a balance sheet

3. What are required reserves? the funds which the bank legally must (is required) to keep.

4. What are excess reserves? cash which it has as extra and could choose to loan out. In the above example, the bank has $1000 in total reserves.

5. Mathematically, how can the increase in the money supply caused by fractional reserve banking be calculated, if one knows the required reserve?

Change in M = deposit multiplier x the initial deposit, where the deposit multiplier (dm) equals: dm = 1/required reserve ratio

6. Suppose a bank with the following financial status has lent out as much money as it can within required reserve rules:

BANK

Assets		***Liabilities***	
Total Reserves	$160	Demand Deposits	$800
Loans	$640		

What is the required reserve ratio implied by this case? 25%

7. If the government required a 100% reserve of money deposited with banks, what would be some likely consequences?

- The US government would no longer have to stand as a surety for the nation's banks, and so risk would be decreased.
- There would be less fluctuation in the money supply, because money creation through fractional reserve banking would be nonexistent.
- There would be less loaning (and borrowing) of money, because the supply of loan money would be less.
- Depositors would likely have to pay higher fees to store money at banks, because banks would have to charge higher fees, not receiving income from loans obtained through excess reserves.

ASSIGNMENT FOR CHAPTER 18

1. What do most (secular) economists mean when they speak of ‘standard of living’? material well being

2. What is the most common way (secular) economists measure standard of living? real per capita GDP

3. How would scripture suggest we should measure standard of living? In evaluating economies and economic systems with respect to the standard of living they produce, we ought to evaluate from a preeminently spiritual perspective, with material factors relegated to secondary status. A high standard of living is foundationally one where the people are in true Biblical peace with God and with men, having been pardoned through faith in Jesus Christ, and submitting to His moral law summarized in the Ten Commandments in grateful devotion.

ASSIGNMENT FOR CHAPTER 19

1. What is a Marxist economic model? In the Marxist model, government dictates production levels, prices, distribution of goods and services, etc., and all private property is abolished. Such economic systems are known as command economies because government controls (or commands) all aspects of economic activity

2. Marxism is highly critical of capitalism, arguing that a capitalist society is divided into which two powerful social classes?

- the working class or proletariat: "those individuals who sell their labor and do not own the means of production" whom he believed were responsible for creating the wealth of a society (buildings, bridges and furniture, for example, are physically built by members of this class
- the bourgeoisie : those who "own the means of production" and exploit the proletariat

3. What is socialism? Socialism is an ideology of a social and economic system where the means of production are collectively owned and administered by all of society via the government. Amongst other things, this is intended to produce a more evenly spread distribution of wealth.

4. What is a 'mixed economy'? In mixed economies, such as found in most modern Western nations, there is a mixture of socialist and capitalist elements.

5. What is pure capitalism? the socio-economic system in which the means of production are overwhelmingly privately owned and operated for profit, decisions regarding investment of capital are made privately, and where production, distribution, and the prices of goods, services, and labor are affected by the forces of supply and demand. Capitalist economies are also known as free market economies, because the allocation of resources is determined only by the supply and the demand for them, free of government interference.

6. What is fiscal policy? the central government's attempt to change economic activity by increasing or decreasing government expenditures, for example on highways, defense, education, public works projects, and social programs, or by increasing or decreasing taxes on individuals or corporations.

7. What is the single largest expenditure by state and local governments? Education is

8. What is the budget deficit? the yearly amount which the government overspends relative to what it receives in taxes

9. What is the national debt? The debt represents the accumulation of all past deficits which the country has incurred.

10. Monetary policy is the central government's attempt to change economic activity by controlling how much money circulates in the economy and what that money is worth. Which entity sets and implements monetary policy in the US? the Federal Reserve System in the US.

ASSIGNMENT FOR CHAPTER 20

1. Economic thought may be roughly divided into which three phases?
   - Pre-modern,
   - Early modern (the French physiocrats of the 18^{th} century), and
   - Modern (since Adam Smith in the late 18^{th} century).

2. Which movement separates the pre-modern era from the modern era? the Enlightenment movement

3. What is mercantilism? It is the economic system based on the premise that national wealth and power were best served by increasing exports and collecting precious metals in return. Mercantilism persisted as the dominant economic perspective of the European nations through the 18^{th} century.

4. What was the economic perspective of the French Physiocrats as represented by its leaders like Francois Quesnay?

The Physiocrats argued, then, that government leave the economy alone and allow individuals within the economy to do as they please in attempting to realize their own selfish interests; this doctrine they called *laissez faire* , or "let them do."

5. What does *laissez faire* literally mean? "let them do"

6. With which economic system is *laissez faire* economics closely associated? capitalism

7. Which book of Adam Smith's, published in 1776, is generally regarded as establishing modern economics? *The Wealth of Nations*

8. Adam Smith was both a product of the Scottish Enlightenment as well as a leading figure of it. Smith attended the University of Glasgow, studying moral philosophy, under tutelage of Francis Hutcheson. Hutcheson had been a student at Glasgow under which Professor of Divinity who has been described as the founder of the Scottish Enlightenment, and whose teaching did much to introduce the "New Light" theology into Scotland? John Simson

9. Most Christians today have a high regard for Adam Smith. Do you think this is justified? Why or why not? no, because Adam Smith rebelled against Biblical Christianity

10. What was the thesis of Robert Malthus' *Essay on Population* (1798)? In this infamous work, Malthus posited his hypothesis that unchecked population growth always exceeds the growth of means of subsistence. Actual checked population growth is kept in line with food supply growth by "positive checks" (starvation, disease and the like, elevating the death rate) and "preventive checks" (i.e. postponement of marriage, etc. that keep down the birthrate), both of which are characterized by "misery and vice". Malthus's hypothesis implied that actual population always has a *tendency* to push above the food supply. Because of this tendency, any attempt to ameliorate the condition of the lower classes by increasing their incomes or improving agricultural productivity would be fruitless, as the extra means of subsistence would be completely absorbed by an induced boost in population. As long as this tendency remains, Malthus argued, the "perfectibility" of society will always be out of reach.

11. What are some flaws of his thesis and why? Malthus failed to take into account the productive potential of the earth should mankind follow God's moral law. He also failed to take into account Christ's Second Coming, which would conclude population growth (given that in the new heaven and new earth there will be no more marriage and procreation). His wicked beliefs concerning population growth eventually gave rise to the birth control movement, and were contrary to the scriptural doctrine of the blessedness of having many children (Psalm 127:5).

12. What was David Ricardo's theory of comparative advantage? According to Ricardo's theory, even if a country could produce everything more efficiently than another country, it would reap gains from specializing in what it was best at producing and trading with other nations.

13. What was Ricardo's "iron law of wages" ? that overpopulation would prevent wages from topping the subsistence level

14. The Frenchman Jean-Baptiste Say was a famous classical economist. His most famous work was *Treatise on Political Economy*. What was "Say's Law", which is presented in his book? It claims that total demand in an economy cannot exceed or fall below total supply in that economy, or as James Mill was to restate it, "supply creates its own demand."

15. Who wrote *Das Kapital*, which served as the philosophical foundation for communism? Karl Marx

16. To which economist goes credit for the concept of price-elasticity of demand, which was studied in an earlier chapter of the textbook? Alfred Marshall

17. How would you summarize neo-classical economics?

“The framework of neoclassical economics is easily summarized. Buyers attempt to maximize their gains from getting goods, and they do this by increasing their purchases of a good until what they gain from an extra unit is just balanced by what they have to give up to obtain it. In this way they maximize "utility"—the satisfaction associated with the consumption of goods and services. Likewise, individuals provide labor to firms that wish to employ them, by balancing the gains from offering the marginal unit of their services (the wage they would receive) with the disutility of labor itself—the loss of leisure. Individuals make choices at the margin. This results in a theory of demand for goods, and supply of productive factors.

Similarly, producers attempt to produce units of a good so that the cost of producing the incremental or marginal unit is just balanced by the revenue it generates. In this way they maximize profits. Firms also hire employees up to the point that the cost of the additional hire is just balanced by the value of output that the additional employee would produce…”

18. Which economist became an influential exponent of the importance of central banking and government involvement in economic affairs in his book *The General Theory of Employment, Interest and Money* (1936)? John Maynard Keynes

19. What are the fundamental flaws of modern humanistic economic schools of thought?

None of them accept that man in his fallen condition is totally depraved and reliant upon the word of God as the foundation for a true knowledge, including of economics. None of them acknowledge that to know true blessed prosperity a people must repent of their sins and turn to Jesus Christ as Lord and Savior. None of them acknowledge that we must serve the Lord in gratitude by upholding the Ten Commandments. None of them acknowledge that we should have reformed Christian nations with reformed Christian established churches. None of them acknowledge that heresy, idolatry, schism, Sabbath desecration, etc. must be suppressed and wickedness punished.

SECTION FIVE: POTENTIAL QUESTIONS ON FINAL EXAM

FINAL EXAM

The final exam for this course consists of a sample of questions from the assignments, selected in order to make sure that a student has understood the material covered. A teacher should select 25 questions from among the questions below, indicating the selection by circling the question number. This final exam should be taken in "closed book" fashion, and students should be given a maximum of one hour to complete the exam.

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1. How does *The American Heritage® Dictionary of the English Language, Fourth Edition* define 'economics'?
2. What is the pre-condition for human knowledge (including economics)?
3. Where do we read God's norm for humans and human society?
4. What is the fundamental reason economic enterprise is not blessed and ideal?
5. To what extent is the judicial law given to the Israelites during Moses' time authoritative today?
6. There are economic laws, just as there are physical laws. How does the definition of 'law' itself imply a Sovereign Creator and Sustainer?
7. How then is the existence of economic laws contrary to the naturalistic worldview?
8. Which of the Ten Commandments is peculiarly pertinent to the topic of economics?
9. Cite 3 examples of sins forbidden in that Commandment which relate to economics.
10. To promote economic prosperity, what ought a civil magistrate do?
11. Based upon scripture, what should we think of a society that tolerates fraud, letting it go unpunished?
12. What does Leviticus 19:13 teach concerning payment of wages of poor hired laborers?
13. To which Old Testament passage did the Apostle Paul quote that declares that the laborer should not be defrauded of his just hire?

14. What does the phrase “just balances, just weights” mean in Leviticus 19:36 according to Dr. John Calvin?

15. What does the Fourth Commandment teach concerning commerce?

16. Why is it foolish to think those who are in rebellion against the God of the Bible can understand even the basics of economics?

17. What does this verse teach about the nature of economic behavior: “Righteousness exalteth a nation, but sin is a reproach to any people “ (Proverbs 14:34)?

18. What does this verse teach about the nature of economic behavior : “He becometh poor that dealeth [with] a slack hand: but the hand of the diligent maketh rich” (Proverbs 10:4)?

19. What does this verse teach about the nature of economic behavior **:** “He that tilleth his land shall be satisfied with bread: but he that followeth vain [persons is] void of understanding” (Proverbs 12:11)?

20. Cite at least one verse that teaches this economic principle: Economic output requires economic input.

21. Cite at least one verse that teaches this economic principle: Those who are lenders long term will rule over those who are borrowers.

22. Cite at least one verse that teaches this economic principle: Those who are wise and knowledgeable will be richly blessed long term.

23. How should we assess the enterprise of those who study economics apart from faith in God’s word?

24. What is ‘induction’?

25. What is ‘deduction’?

26. How is deduction necessary to a right study of economics?

27. How is induction necessary to a right study of economics?

28. How must we use the tool of induction so it is used properly?

29. How can the tool of induction be of use in applying economic principles deducible from scripture?

30. How would you respond to someone who asserted that, based upon his study of American economic history, rising debt levels pose no threat to long term economic prosperity?

31. What are three practical reasons why money is used in commerce?

32. When did the U.S. government prove unable to keep the price of gold at $35 and thus let the value of gold relative to the US dollar float freely?

33. What happened to the price of gold in the 1970s?

34. What happened to the price of gold in the 20 years after the 1970s?

35. There are various reasons why gold is a practical medium of exchange. What is meant by this reason: It is durable?

36. There are various reasons why gold is a practical medium of exchange. What is meant by this reason: It is divisible?

37. There are various reasons why gold is a practical medium of exchange. What is meant by this reason: It is convenient?

38. There are various reasons why gold is a practical medium of exchange. What is meant by this reason: It is consistent?

39. There are various reasons why gold is a practical medium of exchange. What is meant by this reason: It has intrinsic value?

40. There are various reasons why gold is a practical medium of exchange. What is meant by this reason: It cannot be created by government?

41. In light of what you have learned in chapter 5, compose a paragraph analyzing the speech in Appendix B of your textbook.

42. A good indicator of which political entity will replace the US as the next world superpower is the entity whose currency is slowly replacing the US dollar as the world's reserve currency. Which currency is that, as suggested in the speech in Appendix B, and which political entity issues that currency?

43. Why is the US dollar called a 'fiat currency'?

44. The Fed uses three tools to set the level of money supply. What are those three tools?

45. How does the Fed's activity of buying and selling government securities (bonds) affect the money supply?

46. The Federal Reserve System uses a number of different measures to quantify the amount of money which exists in the economy. What does M-1 consist of?

47. How much did M-3 change between 1980 and 2005, according to statistics published in 2005 by the Federal Reserve Bank of St. Louis?

48. What is the Consumer Price Index (CPI)?

49. What has been the trend of the CPI over American history?

50. What is the difference between the Producer Price Index (PPI) and the CPI? .

51. What is significant about the year 1972 when comparing the value of the US dollar in relation to the value of gold?

52. What is significant about the year 1972 when comparing the value of the US dollar in relation to the price of oil?

53. Some people have asserted that the rising price of oil (in US dollars) is owing to oil shortages. What do the graphs of the price of gold and oil suggest?

54. One measure of the price of publicly traded stocks is the Dow Jones Industrial Average (DJIA). It takes a "basket" of important publicly traded stocks of different companies (like Exxon, General Motors, IBM, etc.) and measures how the value of their stocks has changed over time. In simply nominal terms (not adjusted for inflation), what has happened to the DJIA over time? .

55. The term "CPI Adjusted Current DJIA" appears in a graph in the textbook. What does "CPI Adjusted Current DJIA" mean?

56. List the harmful effects of inflation.

57. What are exchange rates?

58. Why is there exchange rate fluctuation among fiat currencies, unless governments intervene?

59. What does the 'depreciation' of a currency mean?

60. What does it mean for a country to have a trade deficit?

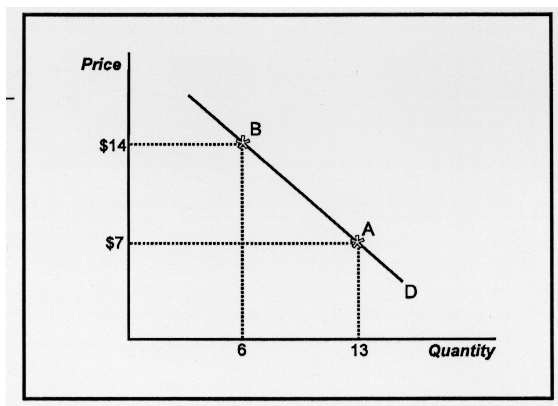
61. What is a “debtor nation”?

62. What does the capital account measure?

63. What does “ceterus paribus” mean?

64. What does the law of demand state?

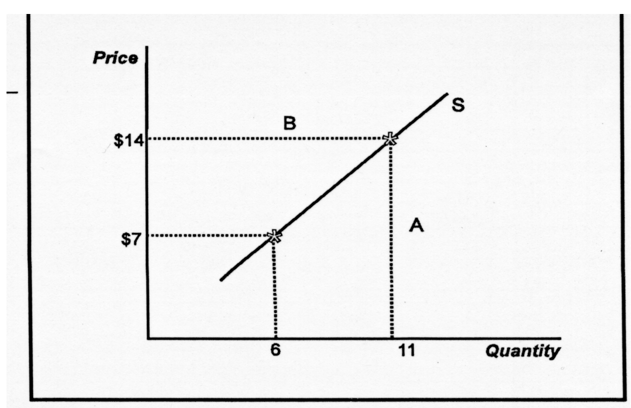
65. A demand curve of a certain commodity is graphed below:



66. According to the graph, what do we know about the quantity demanded of the commodity if it were sold at $5 each?

67. What does the law of supply state?

68. A supply curve of a certain commodity is graphed below:



According to the graph, what do we know about the quantity supplied of the commodity if it were sold at $10 each?

69. What is meant by ‘equilibrium price’ with respect to supply and demand?

70. What is meant by ‘shortage’ with respect to supply and demand?

71. What is meant by ‘surplus’ with respect to supply and demand?

72. The demand schedule (curve) does not always stay in the same position. What are reasons why it may change?

73. Supply shifts as a result of supply determinants. What are five reasons why firms may supply more of a product?

74. Some goods and services respond much more sharply to price changes than other goods and services. Those whose quantity demanded is sharply affected by price changes are said to be what?

75. Define price elasticity of demand.

76. What are three determinants of price elasticity of demand?

77. Define income elasticity of demand.

78. Why are some products classified as “inferior goods” by economists (as opposed to “normal goods”)?

79. What is a production function?

80. What is the Law of Diminishing Marginal Product?

81. In economic terms, what is the “short run”?

82. What is marginal utility?

83. What is the Law of Diminishing Marginal Utility?

84. Is the Law of Diminishing Marginal Utility true of everything? If not, of what is it not true?

85. Should we look at material riches as being permanent?

86. What is one example of a nation in history which went “from rags to riches”?

87. What is one example of a nation in history which went “from riches to rags”?

88. Who is one example of a person in history who went “from rags to riches”?

89. What moral lesson did Jesus Christ drive home concerning the temporality of riches in His Sermon on the Mount?

90. What is ‘perfect competition’?

91. 2. What is ‘monopolistic competition’? .

92. What is an ‘oligopoly market’?

93. What is a ‘monopoly market’?

94. What is an example of purely competitive industry?

95. What are some ways firms, small or large, differentiate themselves from other firms?

96. What is price fixing?

97. What is a sole proprietorship?

98. What is a partnership?

99. What are the two most salient features of incorporation?

100. Which two states, as early as 1817, had moved towards chartering corporations with limited liability?

101. What does ‘liquidity’ mean in the context of investing?

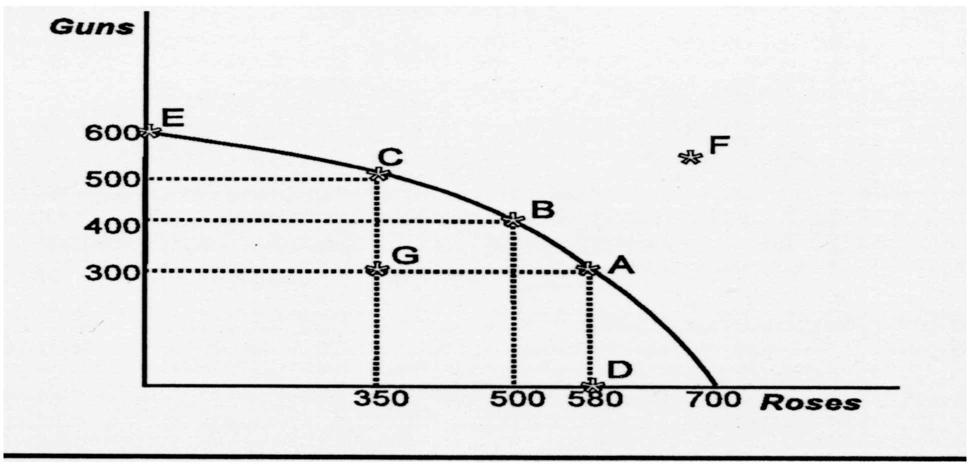
102. What are some arguments that have been advanced in defense of corporations?

103. What are some arguments that have been advanced against corporations?

104. What is a limited liability company (LLC)?

105. What does a production possibilities curve show?

106. The graph below is a production possibilities curve:



If a society with a production possibilities curve as shown above chose to produce 600 guns in the given period, how many roses could it produce?

107. In many nations of the world there is a vigorous "guns versus butter" debate. What do you think is the nature of that debate, and the arguments made by both sides?

108. When economists discuss the concept of "scarcity", what do they mean?

109. What is opportunity cost?

110. How is economic growth visually illustrated on a production possibilities curve?

111. Is a given production possibilities curve applicable for the short run or the long run?

112. President Johnson said: "Because it is right, because it is wise, and because, for the first time in our history, it is possible to conquer poverty, I submit, for the consideration of the Congress and the country, the Economic Opportunity Act of 1964." What does the Bible teach about this pronouncement?

113. What does a “Lorenz Curve” show?

114. What is a progressive tax?

115. What is a regressive tax?

116. What is unemployment compensation?

117. The causes of poverty can be classified under two main categories: those which relate to personal sin and those which do not relate to personal sin. Scripturally speaking, what ought to be done to address personal sin which results in poverty?

118. Scripturally speaking, what ought to be done to address poverty which does not result from personal sin?

119. What is a business cycle?

120. What is Gross Domestic Product (GDP)?

121. What is per capita GDP?

122. The term ‘investment’ for purposes of calculating GDP means something different from what it means in common parlance. What does it mean for purposes of calculating GDP?

123. What is frictional unemployment?

124. What is structural unemployment?

125. What is cyclical unemployment?

126. What is seasonal unemployment?

127. How do economists define full employment?

128. What is Keynesian economics?

129. What do classical and neo-classical economists argue is the most significant culprit of severe business fluctuations?

130. What does the Bible suggest is the major culprit in causing severe business fluctuations?

131. Let's suppose that a country produces only two commodities: apples and oranges.

132. 200 apples are produced at $5 each and 100 oranges are produced at $3 each. What is nominal GDP?

133. Suppose next year the economy experiences some inflation and finds that apples are priced at $15 and oranges sell for $9, but still the same quantities are produced. How much are nominal and real GDP in this year?

134. Let's suppose now that production does change from year one and prices triple as in the previous example (prices are still at $15 and $9 in the new year). Assume production dropped form 200 apples to 100 and oranges from 100 to 50. What are the values for nominal and real GDP?

135. What is fractional reserve banking?

136. What is a T-account?

137. What are required reserves?

138. What are excess reserves?

139. Mathematically, how can the increase in the money supply caused by fractional reserve banking be calculated, if one knows the required reserve?

140. Suppose a bank with the following financial status has lent out as much money as it can within required reserve rules:

141. BANK			
142. Assets		***143. Liabilities***	
144.Total Reserves	$160	145.Demand Deposits	$800
146.Loans	$640	147.	

What is the required reserve ratio implied by this case?

148. If the government required a 100% reserve of money deposited with banks, what would be some likely consequences?

149. What do most (secular) economists mean when they speak of 'standard of living'?

150. What is the most common way (secular) economists measure standard of living?

151. How would scripture suggest we should measure standard of living?

152. What is a Marxist economic model?

153. Marxism is highly critical of capitalism, arguing that a capitalist society is divided into which two powerful social classes?

154. What is socialism?

155. What is a 'mixed economy'?

156. What is pure capitalism?

157. What is fiscal policy?

158. What is the single largest expenditure by state and local governments?

159. What is the budget deficit?

160. What is the national debt?

161. Monetary policy is the central government's attempt to change economic activity by controlling how much money circulates in the economy and what that money is worth. Which entity sets and implements monetary policy in the US?

162. Economic thought may be roughly divided into which three phases?

163. Which movement separates the pre-modern era from the modern era?

164. What is mercantilism?

165. What was the economic perspective of the French Physiocrats as represented by its leaders like Francois Quesnay?

166. What does *laissez faire* literally mean?

167. With which economic system is *laissez faire* economics closely associated?

168. Which book of Adam Smith's, published in 1776, is generally regarded as establishing modern economics?

169. Adam Smith was both a product of the Scottish Enlightenment as well as a leading figure of it. Smith attended the University of Glasgow, studying moral philosophy, under tutelage of Francis Hutcheson. Hutcheson had been a student at Glasgow under which Professor of Divinity who has been described as the founder of the Scottish Enlightenment, and whose teaching did much to introduce the "New Light" theology into Scotland?

170. Most Christians today have a high regard for Adam Smith. Do you think this is justified? Why or why not?

171. What was the thesis of Robert Malthus' *Essay on Population* (1798)?

172. What are some flaws of his thesis and why?

173. What was David Ricardo's theory of comparative advantage?

174. What was Ricardo's "iron law of wages" ?

175. The Frenchman Jean-Baptiste Say was a famous classical economist. His most famous work was *Treatise on Political Economy*. What was "Say's Law", which is presented in his book?

176. Who wrote *Das Kapital*, which served as the philosophical foundation for communism?

177. To which economist goes credit for the concept of price-elasticity of demand, which was studied in an earlier chapter of the textbook?

178. How would you summarize neo-classical economics?

179. Which economist became an influential exponent of the importance of central banking and government involvement in economic affairs in his book *The General Theory of Employment, Interest and Money* (1936)?

180. What are the fundamental flaws of modern humanistic economic schools of thought?

SECTION SIX: TEACHER CLASS LECTURE NOTES

It is possible to administer this course without formal class lectures. Students can simply be told to read the material in the chapter and complete the assignment for it. But some teachers may choose also to have class time when the material in each chapter in the textbook is discussed. This section outlines the recommended content for each weekly class. Copies of Exhibits mentioned in these lecture notes can be obtained from the Westminster Covenant Academy (http://www.puritans.net/Westminster_Covenant_Academy/) webpage which contains the digital lecture files and accompanying lecture exhibits.

For teachers choosing to have class lecture and discussion times concerning the material, they may also want to supplement material in the textbook with additional material that goes more in-depth into some matters only lightly touched upon in the textbook. For such teachers, the material below might be useful, primarily found at http://www.howardcc.edu/social_science/microbk.htm and http://www.howardcc.edu/social_science/macrobk.htm .

CLASS 1

- Welcome to this introductory course on economics from a Biblical perspective. It is important that all of our thinking is consistent with and conformed to God's word. To the extent our thoughts and beliefs are inconsistent with God's word, we are believing falsehoods. And believing falsehoods inevitably has ill consequences, and it is certainly not pleasing to God, who is a God of truth.
- For this course, you will need certain resources. Exhibit 1 of the lecture exhibits accompanying the digital audio lecture files shows these resources. All students should make sure they have these resources as soon as possible in the course.
- This course is intended to prepare students for the Advanced Placement (AP) economics exams administered by the College Board in the US, for those students who want to use it in this way. Extra credit assignments intended to help prepare for the exams will be optional for students. In order to make an A or A+ in this course, it will be necessary to do the extra credit assignments. The highest grade that can be obtained in the course without doing the extra credit assignments is an A-.
- Let's now plunge into the course material. In today's class lecture and discussion we shall be covering the material found in the Introduction and Chapters 1 and 2 of the student textbook. The Assignments for Chapters 1 and 2 are due by next week's class. So you have one week to read the Introduction and Chapters 1 and 2 of the textbook and to do Assignments for Chapters 1 and 2.
- Introduction : Read paragraph 1. You might want to compare the approach of this course's textbook to a more standard textbook, albeit from a more politically conservative perspective, as found at the websites in Exhibit 1.
- Chapter 1 : This chapter begins with a definition of Economics. Read paragraph 1.
- Economics is typically divided into 2 categories: macroeconomics and microeconomics.
- Macroeconomics is a study of economics in terms of whole systems, especially with reference to general levels of output and income and to the interrelation of sectors.
- Microeconomics is a study of economics in terms of individual areas of activity (as a firm, household, or prices).
- Additional readings from Chapter 1.
- Chapter 2 : readings from Chapter 2.
- Reminder: The Assignments for Chapters 1 and 2 are due by next week's class. So you have one week to read the Introduction and Chapters 1 and 2 of the textbook and to do Assignments for Chapters 1 and 2.

CLASS 2

- In Chapters 1 and 2 last week we considered how God's word must be the foundation of knowledge in economics as in all other disciplines, and it must guide how we structure and conduct our commerce. No matter how much the nations of the world may know or think they know about supply and demand, profit maximization, etc., if they are wicked, in the long run God will destroy them and their economies. Economics based in false philosophies like secular humanism and Islam is sheer folly. Instead, economics should be based upon God's word. That was the theme of chapters 1 and 2.
- Make sure you have turned in your assignments for Chapters 1 and 2 that are due.
- Now let's begin to consider chapter 3, entitled "Implications of the Word Concerning How Economic Enterprise Does Occur".
- Chapter 3 : readings from Chapter 3.
- A number of other examples are included in Chapter 3 of how economic behavior occurs in this world.
- Chapter 4 : readings from Chapter 4.
- Chapter 5 : readings from Chapter 5.
- The very word for 'money' in Biblical Hebrew is the same word as 'silver', so tied were the two.
- In Doug Casey's article excerpted in the textbook, he lists some of the practical reasons gold too makes for a sound money.
- Fiat currency is so called because it arises out of government fiat. "Fiat" means an authoritative or arbitrary order, such as by a government. If the government did not mandate that people in the US must accept paper US dollars as payment for debt, then no one would take it as payment for debt. On the other hand, even without such government coercion, people would take gold or silver in payment for debt, because it has a ready value out in the marketplace, even without government coercion.
- In the early years of US history the leaders learned the hard way the dangers of fiat paper currency. The young US government issued Continental dollars. They printed so many of these things, they became of less and less value, almost worthless. It became a common expression at the time to say "it is not worth a Continental" to describe anything worth little. Governments are always tempted to do this when they are in control of the creation of money. If a government can create money, then it can create a lot of government programs, which people like, without having to tax the people, which the people do not like. But in so doing, the money over time becomes worthless. Anyway, the experience was so bad that the Founding Fathers of the US decided to stop future instances by decree in the US Constitution. Article I, section 10 of the Constitution says that "No state shall…make any thing but gold and silver coin a tender in payment of debts", while Article I, section 8 says that "to coin money, regulate the value thereof, and of foreign coin, and fix the standard of weights and measures."
- Let me now read excerpts from **Currency in Colonial America: Then and Now: Making Money in Early America** *by Byron King*

Pittsburgh, PA, USA
December 7, 2004

http://www.whiskeyandgunpowder.com/Archives/2004/20041207.html

… Toward the end of the Revolution, the paper continental note was all but worthless as a store of value or medium of exchange.

The colonial congress passed laws forcing people to use the continental currency to settle debts, but most people did not want to do so. In the face of public resistance, the congress at one point resolved that "Who ever should refuse to receive in payment Continental bills, should be declared an enemy of his country," thus turning peoples' pursuit of their economic self-interest into acts of sedition. Thousands of people were charged with the "crime" of refusing to take a worthless note in payment for goods and debts, and many were fined, were imprisoned, or lost their property to confiscation or forfeiture. ..

Following the Revolutionary War and its associated financial fiasco, the 13 states were reluctant to give any central government much in the way of financial power. The result was the Articles of Confederation, which provided for a weak central government.

Along with a weak central government, the confederation of 13 former colonies had a monetary system that was essentially useless. The monetary affairs of the new nation fell everywhere along the financial spectrum -- from the use of British, Dutch and Spanish coins, usually in coastal cities, to the use of Revolutionary War-era continentals and other state-issued and privately issued paper scrip further inland, to the use of barter in the economies of the Western frontier, where the average person would see no more than a few small coins in the course of a year.

Currency in Colonial America: The US Constitution

The Framers of the U.S. Constitution intended specifically to address the monetary affairs and failings of the young republic. By the end of the Constitutional debate in 1787, the Framers adopted Article 1, Section 8, Clause 4, providing that the Congress shall have the power "to establish...uniform Laws on the subject of Bankruptcies throughout the United States." This was a critical element in addressing the epidemic levels of bad debt that permeated the U.S. economy of the time, as a direct outgrowth of the use of continentals and other state and private scrip. Congress would have the power to rationalize the many conflicting elements of state law and monetary custom within the 13 states, a prerequisite to fostering economic growth. Absent the ability to consolidate and discharge debt, to free up assets that were otherwise encumbered, and to permit people to make a fresh start in commerce, the national economy would remain stalled.

The Framers also adopted Article 1, Section 8, Clause 5 of the Constitution, which provides that Congress shall have the power "To coin Money, regulate the Value thereof, and of foreign Coin, and fix the Standard of Weights and Measures." The companion to this clause is Article 1, Section 10, Clause 1 of the Constitution, which provides that "no State shall...coin Money; emit Bills of Credit; [or] make any Thing but gold and silver Coin a Tender in Payment of Debts." The Framers specifically intended that money in the new republic would be based on the use of precious metals, and not on paper currency." [end quote]

- Roger Sherman from Connecticut, who was a member of the Constitutional Convention of 1787, and one of the strongest proponents of a sound money policy at the Constitutional Convention, had this to write:

> "That no Government has a Right to impose on its Subjects any foreign Currency to be received in Payments as Money which is not of intrinsick Value; unless such Government will assume and undertake to secure and make Good to the Possessor of such Currency the full Value which they oblige him to receive it for. Because in so doing they would oblige Men to part with their Estates for that which is worth nothing in it self and which they don't know will ever procure him any Thing. And since the Value of the *Bills of Credit* depend wholly on the Credit of the Government by whom they are emitted and that being the only Reason and Foundation upon which they obtained their first Currency, and therefore when the Publick Faith and Credit of such Government is violated, then there remains no Reason why they should be any longer current.
>
> If What is us'd as a *Medium of Exchange* is fluctuating in its Value it is no better than *unjust* Weights and Measures, which are condemn'd by the Laws of God and Man, and therefore the longest and most universal Custom could never make the Use of such a Medium either lawful or reasonable." [3]

[3] A Caveat Against Injustice, or an inquiry into the Evil Consequences of a Fluctuating Medium of Exchange.

- So the intent of the Constitutional framers was to secure a sound money policy based on gold and silver. They thought that by doing this they would prevent government in the future from producing fiat paper currency. But, of course, laws end up only being as effective as the people that uphold and enforce them. And today, the US, along with seemingly every other nation in the world, uses fiat currency.
- The Assignments for Chapters 3, 4 and 5 are due by next week's class. So you have one week to read Chapters 3, 4 and 5 of the textbook and to do Assignments related to them.

Other info:

Coin - Title 12, U.S. Code, Section 152
"The terms *'lawful money'* or *'lawful money of the U.S.'* shall be construed to mean GOLD or SILVER COIN of the U.S."

Coinage Act of 1792
Congress fixed the dollar as a specific weight of silver and gold in the form of coin. THIS MEANS. . . If there is no SILVER or GOLD; then there is no dollar!

A Dollar
is a unit of measure, just like an inch, a quart or a mile. This unit of measure can't replace or become the "THING" for which it is the measure. George Orwell *(1984)* called this the "double think." Money has become just that!

Roger Sherman
Author of the gold & silver coin provision of the Constitution, wrote a scathing condemnation of paper money entitled, *"A CAVEAT AGAINST INJUSTICE"* (caveat means warning) in which he stated: "If what is used as a Medium of Exchange is fluctuating in its Value, it is no better than unjust Weights & Measures, both which are condemned by the LAWS of GOD & MAN."

This is why the Framers of the Constitution stipulated a monetary system of Gold and Silver as stated in *ARTICLE 1, SECTIONS 8 and 10 of our Constitution:* "Congress shall have power to coin money and regulate the value thereof ... No State shall make any THING in Payment of Debts."

CLASS 3

- In the last lecture we considered the material in Chapters 3, 4 and 5.
- Please make sure to turn in your assignments for Chapters 3, 4 and 5 that are due.
- Chapter 6 : readings from Chapter 6.
- Chapter 7 : readings from Chapter 7.
- In order to help illustrate this accounting system for balance of payments, as well as exchange rates, let me give you an example.

Right now the US is purchasing more goods from China than it is selling to China. The United States' trade deficit with China increased from $6.2 billion in 1989 to $124 billion in 2003 to $202 billion in 2005. The US gives China US dollars in exchange for goods made in China. The US is running a current account deficit with China. But China has to do something with those US dollars. What it has primarily been doing is buying financial assets in the US. For example, it has been purchasing US government bonds and some US companies. So the US is running a capital account surplus with China. The current account deficit with China has been roughly equal to the capital account surplus. China keeps its currency, the renminbi, fixed to the US dollar by making sure to purchase about as many US financial assets and real estate, as it sells in goods and services.

But let's say that at some time in the future China got tired of accumulating US financial assets like US government bonds. Let's say instead it wanted to purchase European Union bonds with those US dollars. That would mean in the world currency market the supply of US dollars would increase, while the demand for European Union euros would increase. The value of the US dollar would then decrease relative to foreign currencies like the euro. What used to take 80 US dollars to buy, may now take 120 US dollars to buy. Since foreign products would rise in price, Americans might eventually stop buying so many foreign products. So American's current account deficit would then decrease. And since foreigners had become less interested in purchased US financial assets, the US capital account surplus would also decrease.

So see in this thought example how over time a nation's balance of payments may change, while also the exchange rate of its currency changes.

- The Assignments for Chapters 6 and 7 are due by the class 2 weeks from now. Those who want to do the extra credit work, should do the work described in Exhibit 2.

CLASS 4

- In the last class we considered the material in Chapters 6 and 7.
- You need to have your assignments relating to textbook Chapters 6 and 7 done by the next class. For those who want to do the extra credit work associated with chapters 6 and 7 in the textbook, see Exhibit 2 in the exhibits accompanying these lectures. This extra credit work should be submitted along with the assignments relating to textbook Chapters 6 and 7.
- In today's class we consider chapters 8 and 9 in the textbook, along with some supplementary material.
- Let me begin by highlighting portions from chapter 8.
- Chapter 8 : readings from Chapter 8.
- It is good to practice graphing how supply and demand curves change with different scenarios. The different scenarios involve changes in some supply and demand determinants. Try to prepare your own graphs in these 2 different scenarios. After you have tried, then look at Exhibit 11 in the exhibits accompanying these lectures. It shows how your graphs should look.
- Ok, here is scenario 1…
- Here is scenario 2…
- On your own, you might want to think up other scenarios and try graphing the supply and demand curves for them. Such graphs will help you determine how the equilibrium price will change under different scenarios, when there are changes to some supply and demand determinants.
- Chapter 9 : readings from Chapter 9.
- So to summarize regarding elasticity…
- In a future course we are going to be considering more in depth different economic markets of firms. Some firms enjoy a monopoly in their industry, such that they face no competitors. But other firms experience almost perfect competition, because of the large number of competitors in their industry. An example of the former might be an electrical utility company given a monopoly in a given region, while an example of the latter might be a corn farmer in Illinois. Assuming people really need for their survival the product or service provided by the firm, what do you think the demand curve would look like for a monopolist? What do you think the demand curve would look like for a firm in a purely competitive industry? And what would the demand curves for these 2 types of firm suggest about the elasticity of their demand curves? So how would quantity demanded be affected by a price change by the firm?
- Let me read to you this information about the demand curve for a firm in perfect competition…
- Another concept you should be aware of under the topic of elasticity is the cross price elasticity of demand…
- Notice that the cross price elasticity of demand will always be a positive number, because the quantity demanded of a product will increase when the price of its substitute product increases. Consumers will be more interested in buying a product when the price of substitutes are higher.

- This then completes class #4. The Assignments for textbook Chapters 8 and 9 are due by class #6. Those who want to do the extra credit work associated with textbook Chapters 8 and 9, should do the work described in Exhibit 3.

CLASS 5

- This is class #5 in the Econ111 economics course.
- Please submit your assignments for Chapters 6 and 7 that are due by this class, as well as the extra credit work associated with those chapters, if you chose to do the extra credit work.
- Last week we considered the material in Chapters 8 and 9. Remember that are due by the next class.
- You will recall how earlier in the course we said that the subject of Economics is generally divided into 2 sub-categories: macro-economics and micro-economics. Macro-economics looks at economics and commerce from the perspective of what we might call a macro-scope or telescope. In this macro-scope or telescope, we see the economic system as a whole. In contrast, micro-economics looks at economics and commerce from the perspective of what we might call a microscope. It microscopes in on one portion of the economic system, like an individual firm.
- In considering the law of supply and demand in the last class, for the most part we considered the topic from a macro perspective. We only deviated from this towards the end when we considered how a demand curve might look from the perspective of a monopolist firm versus a firm in a purely competitive industry. You will recall that we said that for a purely competitive firm, the demand curve would actually appear as horizontal, because no matter the quantity of products sold by a firm in a competitive industry, the price consumers pay for the product would remain fixed. This is because in a competitive industry there are many, many firms, and no firm commands a significant percentage of the overall market for the product. So the quantity of product made and sold by a particular firm in a purely competitive industry is a drop in the bucket of the overall market in that product. Also, if any firm were to try to sell the product at a price, for say, higher than the prevailing market price, since consumers would have so many other choices of suppliers, they would simply purchase from these other suppliers. So no firm could get away with charging a higher price, lest there revenues become zero. Since the price is essentially fixed for the firm no matter how much the purely competitive firm makes and sells, from the perspective of the firm the demand curve appears horizontal. For this firm, demand is perfectly price elastic then. That is the micro-economic perspective for the firm.
- But contrast that with the macro-economic perspective. For the economy as a whole, the demand curve for the product is downward sloping, because it is the case in the market considered as a whole that the quantity demanded for a particular product will increase as the price of the product decreases.
- Now compare what a firm in a purely competitive industry faces versus a monopolist. Recall that a monopolist is a firm that is the sole supplier of product in a market for a particular product or service. Since the monopolist controls the whole market for a given good or service, the monopolist firm's demand curve from the perspective of the firm appears exactly the same as the demand curve for the market as a whole. Since the demand curve for the market as a whole is downward sloping, the demand curve for the monopolist firm from the

perspective of the monopolist firm is also downward sloping. The monopolist firm's demand is thus more price inelastic than the demand curve faced by a firm in a purely competitive industry.

- This example illustrates how market dominance can affect economic behavior, a topic which is explored in chapter 12 of your textbook.
- Chapter 12 : readings from Chapter 12.
- So chapter 12 in your textbook discusses the different types of firms we find in our economy.
- People who have studied firms have observed and concluded by induction what is called the law of diminishing marginal product, a topic which is taken up in chapter 10.
- Chapter 10 : readings from Chapter 10.
- See Exhibit 12 in the exhibits accompanying these class lectures for a graph illustrating the Law of Diminishing Marginal Product.
- Chapter 11 : readings from Chapter 11.
- This concludes then the lecture for class #5. The Assignments for Chapters 10 and 11 are due by the class #7. Those who want to do the extra credit work, should do the work described in Exhibit 4.
- We shall need to cover more material related to Chapter 12 in our next 2 classes.

CLASS 6

- This is class #6 in the Econ111 economics course.
- Please make sure to submit your assignments for Chapters 8 and 9 that are due, as well as the extra credit work associated with those chapters, if you chose to do the extra credit work.
- In this class and the next class I am going to be going over some material that you will need to know to do some of your extra credit work. In addition, it will be helpful for those planning to take the A/P exam in micro-economics. Some of this material is a review of material previously covered, but much of the material will be new for you. (It is additional Unit 4 and Unit 5 material in microbk.htm.)

Short Run versus Long Run

Economics, like all other disciplines, has its own specialized terminology. Part of studying economics is learning that specialized terminology. One example are the terms 'short run' and 'long run'.

The short run is a time period in which a business has at least one ***fixed*** input (for example, the production space (building) is fixed).

The long run is a time period in which the firm has the flexibility to change ***all*** inputs (buy more or bigger machines, hire more workers, expand the building, etc.).

How long this is depends on the nature of the business. Some businesses can change their inputs faster than other businesses.

Fixed and Variable Inputs

I just mentioned the terms 'fixed inputs' and 'variable inputs'.

Fixed inputs are resources which the firm keeps constant in the short run. Variable inputs may increase or decrease as production increases or decreases. Examples of resources that are typically fixed in the short run are land, heavy machinery, and buildings. Resources that are usually variable in the short run are energy, raw materials, and supplies.

Average Product and Marginal Product

Two other terms you need to understand are average product and marginal product.

Average product is production per worker. Example: if three workers produce 15 cars, the average product is 5, calculating by dividing the 3 workers into the total of 15 cars they produced.

Marginal product is how much an extra worker adds to the output. Example: a fourth worker joins the company; total production rises to 19; marginal product of this fourth worker is 4, because with the new worker total production rose by 4 units.

Now here is a Question for you to consider: If the firm's total production is 19 units, and there are now 4 workers, what is the average product of the four workers? The a***nswer is*** 4.75 units, which is 19 divided by 4.

In Exhibit 13 of the exhibits accompanying these lectures you can see 2 tables of the marginal and average product for the firm, as the number of its workers increases.

In general, the definition of marginal product is: the change in total production/the change in the number of workers.

In table #1 of Exhibit 13 we have data for each worker from 1 through 6. If we do not have data for each worker, the table may look like table #2.

Note that in table #2 of Exhibit 13 the values for average product have not changed from table #1. Only the marginal product values have because the number of workers for whose production was known skipped by 2 and the general definition had to be applied.

The Law of Diminishing Marginal Product

You will recall that in the last class we discussed the Law of Diminishing Marginal Product. The law states that when a firm uses a variable input, such as labor, the productivity of workers who are hired at a later stage is less than the additional productivity of workers who were hired first.

Because of the fixed inputs, there are not enough machines and offices to comfortably accommodate these employees. Subsequently, these workers are not as productive as the third worker. Additional output of the fourth worker is 4 products, the fifth brings in 3 and the sixth employee only contributes an extra one product. Diminishing marginal product takes affect after the third worker.

Keep in mind that this law applies to production behavior of a firm in the short run, i.e. one or more factors of production are fixed (in most cases land or machinery are fixed inputs). In the long run it is possible to add machines and increase the size of an office, etc., so the reasons for diminishing returns are non-existent. It is possible, in the long run, that marginal production declines, but it is for different reasons.

Now let's consider some new concepts relating to what are called Cost Functions and Utils.

Explicit Costs and Implicit Costs

Economists classify these types of costs: explicit (=accounting) costs, and implicit costs. Explicit costs are out of pocket, obvious kinds of costs, e.g. expenses on books, tuition, gas, etc..

Implicit costs are not really expenses you incur, but involve income or values you are giving up by not doing something that you could have chosen to do. For instance, if you decide to go to school full time instead of working a $20,000 job, you are giving up earning $20,000. This is your implicit cost. Another term for it you will often hear is "opportunity cost".

Sample problem: Suppose you are running a small business and incur the following expenses: labor = $80,000; raw materials = $30,000; finance charges on a loan = $3,000. You are not paying explicit rent, because you own the building you are operating in. If you would rent it out, however, you could be earning $12,000. You also estimate your own time to be worth $25,000. What are your expenses?

Answer: **Explicit costs =** $80,000 + $30,000 + $3,000 = $113,000.
Implicit costs = $12,000 + $25,000 = $37,000.
Total economic costs = explicit + implicit costs = $150,000

So in this example total economic costs are $150,000, but total accounting costs are only $113,000. Remember, accounting costs is just another term for explicit costs.

Paralleling this difference between accounting costs versus implicit costs, there are what is called accounting profits versus economic profits.

Accounting versus Economic Profits

To calculate accounting and economic profits we need to know the company's total revenue. Let's suppose it is $140,000. Then, accounting profits are: total revenue minus explicit costs or: $140,000 - $113,000 = $27,000. Economic profits are: total revenue minus total economic costs or; $140,000 - $150,000 = -$10,000 (i.e. a loss of $10,000).

The above firm reaps a positive accounting profit; but the negative economic profit indicates that from an economic point of view, economically speaking the owner should discontinue the operation. He could make more money being an employee than trying to be an employer.

Cost Functions

Exhibit 14 lists the 7 cost functions that students need to understand:

1. **Total Variable Cost (TVC)** – The cost of all variable resources
   Examples: Cost of labor, materials, office supplies

2. **Total Fixed Cost (TFC) –** The cost of all fixed inputs
Examples: Cost of the building, large pieces of machinery, certain taxes

3. **Total Cost (TC) –** This the sum of TVC and TFC.

4. **Average Variable Cost (AVC) –** This is variable cost per product.

5. **Average Fixed Cost (AFC) –** This is fixed cost per product.

6. **Average Total Cost (ATC) –** This is total cost per product.

7. **Marginal Cost (MC) –** This is the cost of producing an additional unit of the product.

Cost Calculations

Exhibit 14 also shows how the various cost functions formulaically relate:

ATC = TC/Q
AFC = TFC/Q
AVC = TVC/Q
MC = change in TC/change in Q

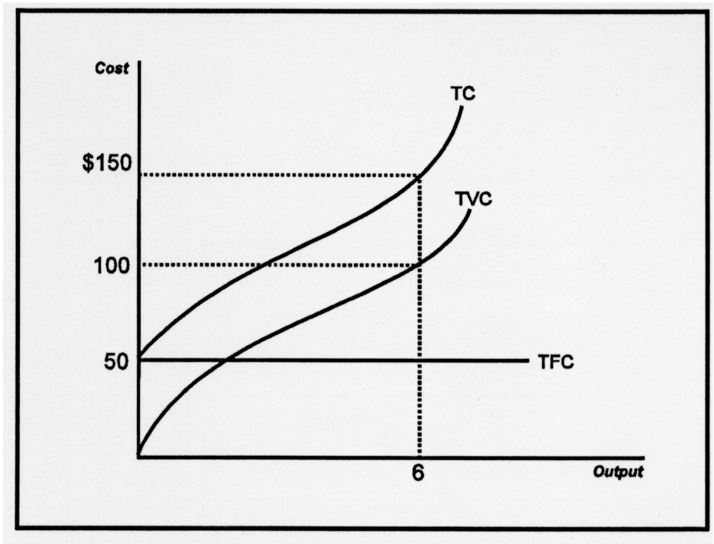
Here is an Example: Let's suppose you are making 50 bottles of grape juice each week. You know that your fixed costs add up to $300, and your variable costs amount to $900. You also know that if you were to make an extra 5 bottles, your total cost would rise by $60. What is your total cost; average total cost; average total cost; average variable cost; average fixed cost; and marginal cost?

Answer: Total cost = $300 + $900 = $1200

ATC = $1200/50 = $24
AVC = $900/50 = $18
AFC = $300/50 = $6
MC = $60/5 = $12

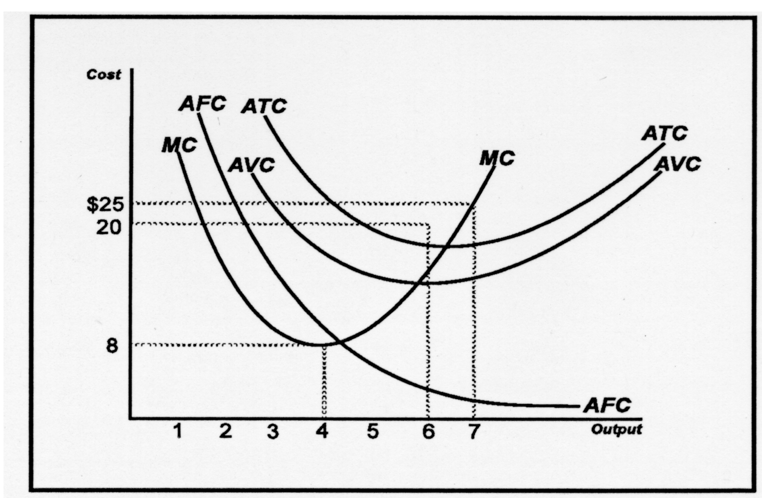
Exhibit 15 shows Cost Curves of a typical firm. It is important that you study these cost curve graphs and come to understand them.

For instance, consider Graph 1:



Notice that in this graph when output is 0, that TVC is $0, but TFC is $50. But its very definition, TFC does not vary with level of output. Also notice that TC equals TVC plus TFC. Notice that when output equals 6 units, that TFC =$50 and TVC=$100, so TC at that level of output equals $150. Finally, notice the typical shape of the TVC and TC curves. This is owing to the fact that the MC typically is great to begin with but declines and then starts to rise again.

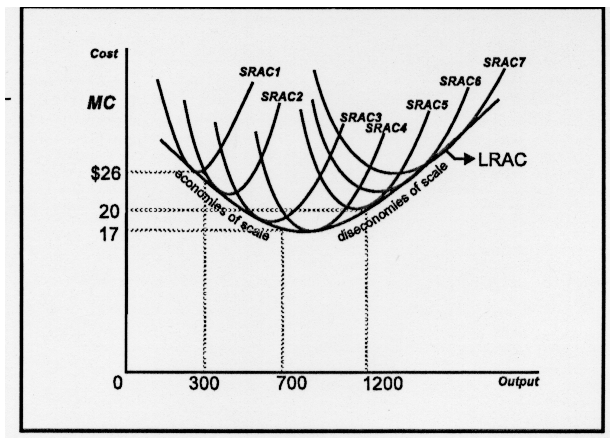
Now consider Graph 2:



You can see how MC declines until the level of output is 4 units. And so long as MC is less than the AVC, then the AVC continues to decline. But at 6 units of output, the MC becomes greater than the AVC, and the AVC then begins to rise. And when the MC starts to become greater than ATC, then the ATC begins to rise. But notice how AFC continually declines as output increases, because the set level of fixed costs is divided over more units of output.

Exhibit 16 shows the Long Run Average Cost Curve. The long-run average cost curve is derived from a number of short-run average cost curves. For each fixed plant size (short run), you look at the lowest costs for that size plant. These bottom portions of the different short run cost curves make up the long run average cost curve.

Fig. 5.6



➢ A firm's long run average cost curve is the "envelope" of many short run average cost curves. All inputs are variable and the firm has the choice of building or changing to a variety of plant or facility sizes. A small operation (SRAC1) which wants to produce 300 units will have average costs of $26. A larger one, which produces 700 units, can produce each product for $17 (economies of scale). When the firm gets too large (SRAC6), average costs rise to $20 (diseconomies of scale).

In this Exhibit 16 graph notice how the LRA cost decreases up to a certain level (in this case 700 units), but then starts to increase. Why is that the case? In order to understand why the LRA cost curve typically follows this pattern, it is necessary to understand economies and diseconomies of scale.

Increasing, Decreasing, and Constant Returns to Scale

Increasing returns to scale is closely associated with the concept economies of scale (the downward sloping part of the long run average total cost curve.) Decreasing returns to scale relates to diseconomies of scale (the upward part of the curve).

Increasing returns to scale occurs when a firm increases its inputs, and a more than proportionate increase in production results. For example, one year a firm employs 200 workers and 50 machines and produces 1000 products. A year later it increases the number of workers to 400 and the machines to 100 (inputs doubled) and the output rises to a level of 2500 (more than doubled).

Increasing returns to scale is often accompanied by decreasing long run average costs (economies of scale). A firm which gets bigger may experience this because of increased specialization, more efficient use of large pieces of machinery (for example, use of assembly lines), volume discounts, etc.

Decreasing returns to scale happens when the firm's output rises by less than the percentage increases in inputs. In the last example, had the firm's output risen to 1500, we would experience decreasing returns to scale.

Decreasing returns to scale can be associated with rising long run average costs (diseconomies of scale). An organization may become too big, thus creating too many layers of management, too many departments, and too much red tape. This lead to a lack of communications, inefficiency, and delays in decision making.

Constant returns to scale occurs when the firm's output rises proportionate to the increase in inputs.

Marginal Utility

Marginal utility is the additional satisfaction one gets from consuming one more item of a good or service. Satisfaction is measured in utils (use your imagination). Let's say that you are about to eat a pizza consisting of 6 slices. The first piece might give you 140 utils of satisfaction (you were starving!). The second slice, your hunger somewhat satisfied after the first, yields you only 60 utils. The third's down to 20 utils and a possible fourth, if forced upon you, could produce negative additional utils (your total would drop.)

The Law of Diminishing Marginal Utility

Referring back to the example in the previous objective, you can see that the marginal utility declines as the person consumes more slices. This is typical of almost all (beer and other substances known to be harmful to body and soul may be sole exceptions…) consumption: the more you have of something the less the additional unit is worth to you.

This phenomenon explains why if you are shopping in a supermarket you only buy a limited quantity of goods. As the marginal utility of, for example, the fifth orange declines, you may decide that this orange is not worth your additional expense.

- The Assignment for Chapter 12 is due by class #8. Those who want to do the extra credit work, should do the work described in Exhibit 5.

CLASS 7

1. This is class #7 in the Econ111 economics course.
2. Please turn in your assignments for Chapters 10 and 11 that are due today, as well as the extra credit work associated with those chapters, if you chose to do the extra credit work.
3. This week we continue to consider material associated with Chapter 12, especially information you will need to understand to do the extra credit work associated with chapter 12 and to understand for the AP micro-economics exam. (This is Unit 6, 7, 8 material in microbk.htm) :

We have in previous classes discussed the different industry types, ranging from perfect competition to pure monopoly. Perfect competition and monopoly are the two extremes and very few firms can be said to be either purely competitive or purely monopolistic. However, to better understand the more realistic industry types it is important to learn about the two extremes first. Recall that:

Perfect competition is a market structure in which there are many competing firms selling identical products or services.

Monopolistic competition is a market structure in which there are many firms selling slightly differentiated products or services. Be sure not to confuse this market with the monopoly market. They are actually quite different. The emphasis in monopolistic competition should be on “competition.”

An oligopoly market contains a few firms who dominate the industry and one firm’s actions is known to very much affect another’s.

A monopoly is an industry with only one seller. The product which the firm sells typically has no close substitutes. Most monopolies in the United States are regulated by our governments (state and local).

1. Each type of firm – purely competitive firm, monopoly, monopolistic competitor, and oligopoly – has a different way to maximize its profits. Let’s consider what each needs to do to maximize profits for itself.

1. Profit Maximization of a Purely Competitive Firm

Total Revenue and Profit

A firm derives revenue from selling a product or service. The total sales revenue (TR) is equal to the number of products sold times the price of the product (Q x P). For example, if a firm sells 100 newspaper subscriptions at $1 per newspaper, its total sales revenue would be 100 x $1 = $100.

A firm's profit is its total revenue minus its total cost, or TR – TC. For instance, if the above firm's total costs amount to $80, then its profit would be $100 - $80 = $20.

Average Revenue and Marginal Revenue for a Purely Competitive Firm

Exhibit 17 shows the demand curve as seen by a purely competitive firm. As mentioned in a previous class, for a purely competitive firm, the demand curve appears flat, because the market sets the product price for a purely competitive firm, and that price does not vary with change in output by the purely competitive firm.

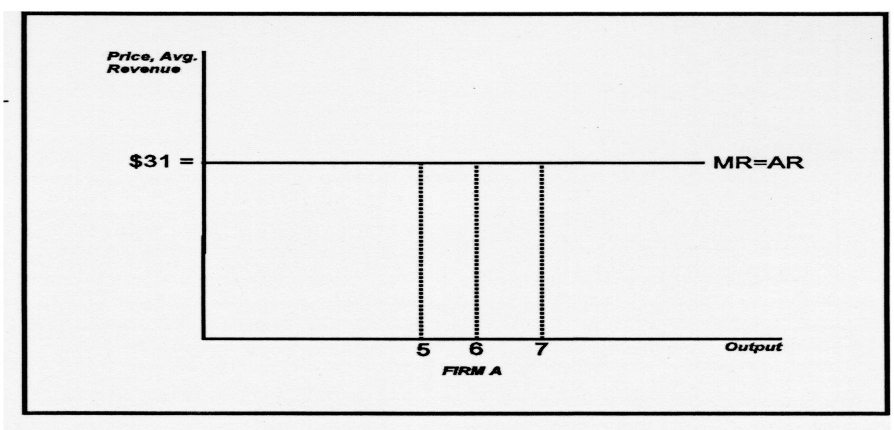
The marginal revenue and average revenue (demand) curves are horizontal and identical to each other. To illustrate this, let's take a look at the following example:

Firm A sells 100 books for $5 each. The next day it sells its 101st book and the following day its 102nd. Both additional books are sold at $5 each. What is marginal revenue and average revenue?

Total revenue at 100 books is $500; at 101 revenue is $505 and at 102 it is $510. The difference in revenues per book (=marginal revenue) is $5. Average revenue is also $5. ($500/100; $505/101; $510/102).

Because the average and marginal revenues are constant at $5, we can see that the average (=demand) and marginal revenue curves in this purely competitive market are all the same.

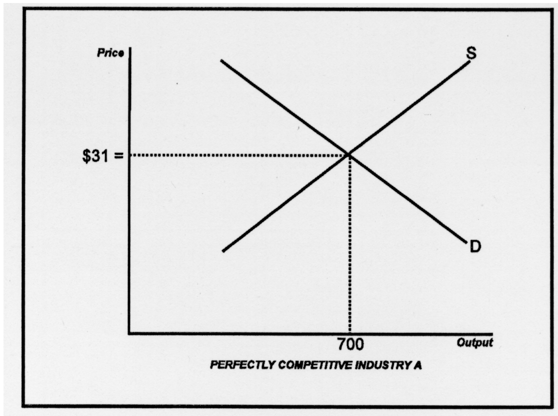
The "curve" is drawn as a straight horizontal line. That is why the demand curve for a purely competitive firm is shown as a straight horizontal line in Exhibit 17:



Note this:

- ➢ The marginal and average revenue (=demand) curves for a typical firm in pure competition are identical: a horizontal line originating from the equilibrium price of the product.

Though the demand curve for a single firm in a purely competitive industry is horizontal, the demand curve for the industry as a whole is downward sloping , as we see in Exhibit 18:



➢ The demand curve for all firms combined (i.e. the industry) is still downward sloping, as illustrated above.

Profit Maximization for a Purely Competitive Firm

The table in Exhibit 19 contains cost data for a firm. Suppose the firm is in perfect competition. Assume also that the market price of economics textbooks is $31.00 per book. What is the best output which this firm should produce, i.e. at which output is it most profitable?

A quick way to determine this is to compare the values in the marginal cost column with the marginal revenue (equals the price of $31.00 identifies the output at which profits are maximized.

In the table in Exhibit 19 this occurs at output level 7 (marginal cost is $30 at this output). To verify, you can compute the profit amounts at each output. For example at output 3, total profit is total revenue minus total cost, or: $93-$110 = -$17. At output 8, profit is $248 - $215 = $33. At output 7 (the profit maximizing quantity) profit is $37. See Exhibit 20 for a graph of this scenario.

It is important to note: When you research for the marginal cost value which comes closest to the marginal revenue, two further conditions need to exist:

1. The marginal cost must not be falling (at output 1 marginal cost is also $30, but it declines thereafter)
2. Average variable cost must be less than the price; otherwise produce zero output (in other words, shut down operation entirely).

Now let's suppose this scenario: If the market price drops to $21, which output should be produced?

Answer: Output = 6; profit = $126 - $150 = -$24

Now let's suppose this scenario: If the market price drops to $15, which output should be produced?

Answer: Close down (Q = 0), as the price is less than any average variable cost value. Loss: $50.

So a firm maximizes its profits at the output which corresponds to the point where the marginal cost curve intersects the marginal revenue curve.

The firm should shut down at least temporarily if the price drops below the shut down price of $16.00. At a price below $16.00 the firm not only loses money on its fixed costs, but also on its variable costs. In other words, if it did operate at a price below $16.00, its loss would be worse than if it produced a quantity of zero (shut down).

The Profit Area

Please refer again to the graph at Exhibit 20.

At any output, the vertical distance from the demand curve to the average total cost curve represents the firm's average profit (price minus average total cost). Multiplying this by the number of products sold will get you total profit. This is equal to the shaded area in the graph at Exhibit 20 (length x width, or Q x Avg. profit).

So The Rule of Profit Maximization (or Loss Minimization) is this:

A firm maximizes profits where its marginal revenue is just equal to its marginal cost. Graphically this occurs where the MR and MC curves intersect. In a table the MR and MC may not always be exactly equal. In that case the firm maximizes profits where MC is as close as possible to MR without exceeding it. Remember that we pointed out that two other conditions must be satisfied: the price of the product must always be greater than average variable cost (otherwise the firm must shut down), and when you look for the intersection of MC and MR, make sure MC is upward sloping.

That is how things should be understood in the short run. But what about the long run for the purely competitive firm?

Long Run Output and Profit Determination

Because of the relative ease with which new firms can enter industries in which existing firms are small, economic profits are never exorbitant. If in the short run a competitive firm is reaping above normal economic profits, venture capitalists (investors) from outside the industry will become attracted to the profit potential and enter the industry. This increases the supply of the good and lowers the price of the product. The lower price will lower the existing firms' above normal profits.

The reverse is also true: if firms in the industry are incurring losses, then some will eventually go out of business. The lower supply will raise the price and increase the profits for the surviving businesses until the profits approach normal levels again. If there is not enough demand for any businesses to survive, the industry will cease to exist and resources will be allocated into other, more profitable investments.

Exhibit 21 illustrates the situation in the long run for the purely competitive firm. Notice that at first the equilibrium price is \$31.00 and at that price firms are making positive economic (above normal) profits. However, this profitable price attracts other firms into this market and shifts the market supply curve to the right to establish a long run industry equilibrium price of \$25.00 (minimum ATC value).

Firms are making zero economic profits at this price, as illustrated for a typical firm in the long run in perfect competition:

With this new industry situation, the firm's long run output for profit maximization is 6 units:

- ➢ At the profit maximizing quantity of 6 the firm's average total cost equals the price. This means that economic profits are zero.

2. Monopoly Profit Maximization

The Monopolist's Demand Curve

Because the monopolist is the industry, the monopolist's demand curve is the industry demand curve. This demand curve, as we saw in the chapter on supply and demand, is downward sloping. Also, because there are no close substitutes for this product, the demand curve is relatively steep, or inelastic, as we see in Exhibit 22 :

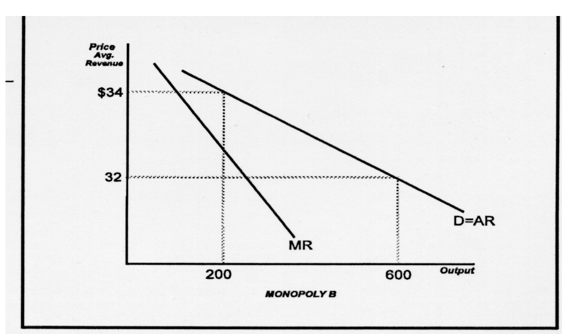


Exhibit 22 then shows the typical demand (AR) and marginal revenue curves of a monopolist. Average revenue, by definition, is equal to the price of the product, so the AR revenue curve is the same as the demand curve. The MR curve is in a different location, however. It is downward sloping and lies below (it's steeper) the demand curve.

The following example shows that in a monopoly market the MR is always less than price:

A monopolist produces 100 newspapers (sometimes a newspaper firm can hold a local monopoly) at a price of \$.50 per newspaper. It can also sell 120 newspapers at \$.45 per paper; or 140 papers at \$.40 per newspaper. Notice that when the price changes to \$.45 and \$.40, the marginal revenue drops to \$.20 (4/20) and \$.10 (2/20) respectively. To check this, calculate the total revenue at output 100: TR = PxQ = \$.50 x 100 = \$50. At output 120, TR is: \$.45 x 120 = \$54. So the marginal revenue equals \$4 (the increase in total revenue) divided by 20 (the increase in output) or \$.20. Similarly, the marginal revenue from output 120 to 140 equals \$2 divided by 20 or \$.10.

The Monopolist's Profit Maximizing (Loss Minimizing) Situation

Similar to the pure competition case, a monopolist maximizes profits by finding out where MC and MR are equal or almost equal (still contingent upon MC not exceeding MR; MC must not be falling; and price must be at least as great as AVC). Remember that profit is TR – TC and average profit is price (AR) minus ATC.

Exhibit 23 shows the cost and revenue table for the newspaper monopolist. Note that even though monopolists like this one often make profits, there is no guarantee that they always do. You can see that in the Exhibit 23 table there are various output levels were the monopolist's total costs are greater than the monopolist's total revenues.

Output	Total Fixed Cost	Total Variable Cost	Total Cost	Average Variable Cost	Average Total Cost	Marginal Cost	Price	Total Revenue	Marginal Revenue
0	\$5000	\$0	\$5000	-	-	-	\$38	\$0	-
100	5000	3000	8000	\$30	\$80	\$30	37	3700	37
200	5000	5000	10000	25	50	20	36	7200	35
300	5000	6000	11000	20	36.67	10	35	10500	33
400	5000	6800	11800	17	29.50	8	34	13500	31
500	5000	8000	13000	16	26	12	33	16500	29
600	5000	10000	15000	16.67	25	20	32	19200	27
700	5000	13000	18000	16.67	25.71	30	31	21700	25
800	5000	16500	21500	20.63	26.88	35	30	24000	23
900	5000	22000	27000	24.44	30	55	29	26100	21

So here is the question: *Given the Exhibit 23 revenue and cost data for a monopolist who sells newspapers, what are the profit maximizing output, price, and profit for this firm?*

The Answer is as follows:

Output	=	600 units
Price	=	\$32
Profit	=	\$19,200-\$15,000 = \$4,200
Average Profit	=	\$7

3. Monopolistic Competition

Long Run Price and Output Equilibrium in Monopolistic Competition

Because there are no barriers to entry into this type of industry a firm will not be expected to make economic profits in the long run. If (for a short while) a firm is making above normal (=economic) profits, then other firms would quickly enter this industry in order to share in the profits. The profitable firm's sales would suffer and in the long run its economic profits would be zero. The reverse occurs when firms lose money.

Graphically, the long run equilibrium shows the average total cost curve just touching the demand curve above the output where MC = MR.

The monopolistically competitive firm makes no economic profits (only an accounting profit) in the long run, so the ATC curve just touches the demand curve (i.e. P = ATC). Profits are zero for firms in monopolistic competition because there are no barriers to entry. If profits exist in the short run, new firms would enter the industry to increase supply, lower the price and reduce economic profits.

Monopolistic Competition as a More Realistic Model

As you can judge from the characteristics, the model of monopolistic competition is more realistic than the purely competitive one. All firms, small or large, differentiate, if not through different ingredients, certainly in the way that they package, name, distribute, or service their products. Advertising is also very common; it benefits the firm because of the greater exposure to a larger market and often benefits the consumer by informing her/him of the choices available.

Monopolistically competitive firms earn "normal" accounting or so-called "zero" economic profits. Firms look at their cost of production and then mark up their prices to obtain a reasonable percentage profit. If any firm marks up its prices too much, another firm will take advantage of it by charging a slightly lower price. This will cause the first firm to lose market share and the mark-up will be adjusted accordingly. This competitive process occurs in any industry, monopolistic competition, oligopoly or monopoly, as long as there is free, unrestricted (from government legislation) competition. It is rare therefore to see a firm in any unrestricted industry experience exorbitant, above normal economic profits for an extended, long term period of time.

4. Oligopoly

When oligopolistic firms collude and behave in a monopoly-like fashion they will be able to restrict output and charge a higher price. Each firm will see its profits increase in the short run as companies engage in price setting (fixing) and cooperate to keep out competitors. Collusion and cartels are not legal in the United States. In contrast, legal cartels abroad are fairly common. The most famous example of an international cartel is OPEC (Oil Producing and Exporting Countries).

Collusion among producers and retailers may occur legally (outside the U.S.) or covertly. However, cartels frequently run into problems for the following reasons:

1. Cartel members' interests and goals may differ. This makes it very hard to reach an agreement between members. For instance, in the case of OPEC, Saudi Arabia, Iran, Iraq, Kuwait and other nearby countries have long fought (recently very literally) about how much to produce and what price to charge. The fierce disagreement between Iraq and Kuwait in July of 1990 triggered the war which broke out the following month. Another OPEC country, Venezuela, is interested in maintaining a high price and restricting output to preserve its smaller holdings of oil for a longer time.

2. Even if an agreement has been reached it is tempting for members to secretly cheat and supply more at the very high monopoly price in order to increase revenue. Of course if all countries cheat and increase supply the effect of a cartel is completely lost.

3. At the very high cartel price it becomes increasingly attractive for new producers to enter the market. In the oil market this has indeed occurred. After the price of a barrel of oil reached $34 in the late '70s, other countries found it profitable to drill and export oil. England, Mexico, Norway, the United States, and Russia entered the market and through their competition drove down the price of oil. During the 1980's and early '90s the average price of a barrel of oil came down and it made OPEC's life a lot more difficult.

The above examples illustrate that, in the long run, given free and unrestricted competition, no firm, whether oligopolistic or monopolistic, can be expected to earn above normal profits. Competitive market forces in the long run typically prevail and provide a fair price to consumers.

This now completes review of the material related to Chapter 12 in your textbook. You need to submit your assignment work associated with Chapter 12 by the next class.

CLASS 8

- This is class #8 in the Econ111 economics course.
- Please turn in your assignment for Chapter 12 that is due today, as well as the extra credit work associated with the chapter, if you chose to do the extra credit work.
- In the last class, and in this one as well, there are graphs that are discussed. It is important, if you plan to take the AP economics exam, that you spend time studying the graphs until you come to an intuitive understanding of them. For example, we noted in the last class that the Average Revenue curve is the same as the demand curve, whether for a perfectly competitive firm or a monopolist firm. You need to understand why this is so. It is so because the price that the market consumers are willing to pay at a given output level (in other words, the demand price) is the same as the average price the firm will charge those consumers at that output level (in other words, the average revenue). To take another example, we noted in the last class that the downward sloping Average Revenue curve is located above the Marginal Revenue curve. In other words, at any given output level, the Marginal Revenue price is below the Average Revenue price. This must be the case if the Average Revenue curve is downward sloping, because such a downward slope implies that each additional unit of output is generating less revenue than the average revenue. If marginal revenue equaled average revenue, as it does for the perfectly competitive firm, then the Average Revenue curve would be flat and not downward sloping. These 2 examples illustrate how you need to think about the graphs and come to understand why they are the way they are. Only in this way will you be able to do well on the AP exam. It will not work just to try to memorize things without understanding.
- Chapter 13 : readings from Chapter 13.
- So Chapter 13 explores the question of whether it is right for a nation to create an entity like the corporation where the owners of the entity are shielded from the responsibilities and liabilities Biblically associated with ownership. It should be noted that this is different from the question of whether the individual should incorporate his business if he resides in a nation where such limitations on liability exist and which tend to have problems with over-litigiousness and even frivolous and costly lawsuits. I personally believe incorporating in such a circumstance can be justified, but that does not mean the nation ideally should allow such over-litigiousness or the creation of entities with such limited liability. As one reads Chapter 13, one can see that limited liability corporations are largely a modern phenomenon. The question is whether owners should be let off the hook from responsibilities that ownership normally entails according to scriptural precept.
- Chapter 14 : readings from Chapter 14.
- Economics as generally taught has this as a dictum: humans have unlimited wants but limited resources. This dictum is largely true, especially in a fallen world. And since it is true, humans have to choose how to allocate their limited resources, as discussed in textbook Chapter 14. Of course, it is not wrong to want things within measure, but it is wrong to covet them.
- Notice that this chapter mentions “opportunity cost”, which is a term we previously discussed.

- While we are considering the production possibilities curve, I want us to consider some concepts that we shall be discussing more in future classes. These concepts are absolute advantage versus comparative advantage, and the concepts are illustrated in Exhibit 24. But let's first define the terms and some related terms.
- Absolute advantage is the ability of an economic actor (whether an individual, a household or a firm) to produce some particular good or service with a smaller total input of economic resources (labor, capital, land, etc.) per unit of output than other economic actors. Because one actor is more efficient in the production of the output, it is able to produce more. In the production possibilities curves at Exhibit 24, suppose both nations have an equal number of resources. Clearly, nation 1 is more efficient than nation 2. It has an absolute advantage over nation 2 in making both guns and roses.
- Comparative advantage is the ability of one economic actor (whether an individual, a household, a firm, a country, etc.) to produce some particular good or service at a lower opportunity cost than other economic actors can. That is, the economic actor with a comparative advantage can produce the particular good or service by giving up less value in other goods or services that he could otherwise produce with his labor and resources than the other economic actors would have to give up in producing that same good or service. In analyzing the theory of trade and economic specialization, it is important to distinguish absolute from **comparative** advantage, since it is comparative advantage that determines the potential welfare gains from specialization and trade, and not absolute advantage. This perhaps can be made clearer by this example, illustrated in Exhibit 24:

  Suppose both nation 1 and nation 2 are able to produce two goods: guns and roses. For nation 1, producing one gun requires 10 hours of labor and producing one rose requires 20 hours of labor. For nation 2, producing one gun requires 12 hours of labor and producing one rose requires 48 hours of labor. Since every hour of labor devoted to making guns is an hour that cannot be used for making roses, and since there are only so many hours of working time available per month, both nation 1 and nation 2 face trade-offs in allocating their working time between the two possible activities: making more guns means making fewer roses and vice versa. But the precise numerical trade-offs the two face are different. For nation 1, every additional rose he produces only "costs" him 2 guns he could otherwise have made in the 20 hours. But for nation 2, every additional rose he produces "costs" him 4 guns he could otherwise have made in the 48 hours of labor. Because nation 1 only has to give up two guns per rose, while nation 2 has to give up 4 guns per rose, nation 1 is said to have a "comparative advantage" in rose making. And by the same token, nation 2 has a "comparative advantage" in gun making, since it only gives up 1/4 of a rose for every gun he makes, whereas nation 1 gives up 1/2 of a rose for each gun it makes.)

  Note that an economic actor can display a comparative advantage in the production of a particular good even when the other actor happens to have an absolute advantage in producing the same good. In our particular example, nation 1 is evidently much more efficient in making *both* products than nation 2 is. Thus nation 1 has an *absolute* advantage in making both products, but nation 2 nevertheless still has a ***comparative*** *advantage* in gun making. This is because any actor's ***comparative*** *advantage* depends only upon the relationship between that *single actor's own* levels of productivity for *two goods* under consideration, while [*absolute* advantage] depends only upon the relationship between *two actors'* levels of productivity for the same *single good* under consideration.

The distinction between comparative and absolute advantage is important because it is comparative advantage (and **not** absolute advantage) that determines the amount of the potential gains in output from specialization and trade between the two actors. And this leads us to the *Principle of Specialization. According to Comparative Advantage*:

Total production of goods will be increased if each economic actor devotes more of his scarce resources to producing the good(s) in which he has a comparative advantage and less of his scarce resources to producing the good(s) in which he has a comparative disadvantage.

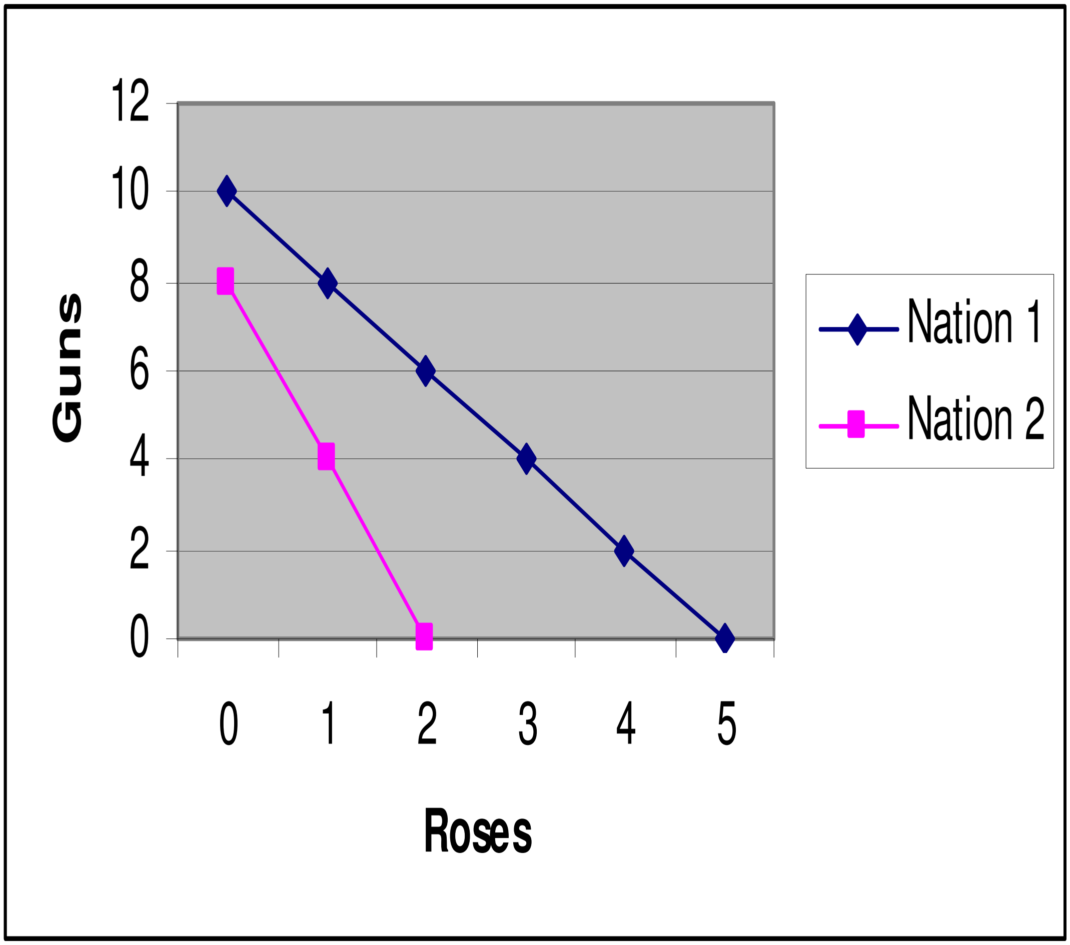
If the two actors can agree to trade goods at any exchange ratio ("price") that is somewhere between the (different) opportunity cost ratios of the two actors, then **both** actors will be able to have more of both goods ("be better off") with specialization than would be possible without specialization, even if one actor has an absolute advantage over the other in production of both goods.

- So two terms associated with the concept of comparative advantage are specialization and division of labor. Specialization, in the economic sense, is the social phenomenon of individual human beings or organizations each concentrating their productive efforts on a rather limited range of tasks. Specialization entails focusing on a narrow area of knowledge or skill or activity. It involves a person's or an organization's adapting for the unusually effective or efficient performance of some particular function, often at the expense of the individual's or organization's ability to perform most other functions for themselves, which are then necessarily left to others with more appropriate skills or talents or abilities. Like the division of labor, specialization generally comes about because it is discovered (usually by trial and error) that the individuals or groups concerned can increase their productivity (and hence, under a market economy, their incomes) through greater specialization according to the principle of comparative advantage.
- Division of labor is the division of a complex production process into a number of simpler tasks, each one of which is undertaken by a different individual who typically (but not necessarily) specializes in one task (or a very few tasks) on a more or less permanent basis. The advantages of division of labor for enhancing human productivity were extensively analyzed by Adam Smith in his 1776 book *The Wealth of Nations*, where he coined the phrase. We shall be considering more about Adam Smith later in this course.
- We should note that division of labor is not simply a modern phenomenon. Even in the opening chapters of Genesis we read how Abel specialized in one trade and Cain in another. Or consider how the Levites were dedicated to the Temple service, while other Israelite tribes did other work. We find that some people specialized in fishing, some specialized in carpentry, etc.
- Having said all this, there can be reasons why a nation might wisely retain some level of production in industries even where it lacks comparative advantage. For example,

if a nation had no internal defense industry, then it could find itself at the mercy of foreign nations in a war, and it could be in big trouble if those foreign nations are enemy states.

- One thing we should keep in mind is that while scripture warns against entering into partnership or co-ownership with non-Christians, it does not forbid trade with non-Christians. We see in many places in scripture where the people of God trade goods with the heathen, and this is regarded as acceptable conduct.
- That concludes the material we needed to cover in class #8.
- The Assignments for Chapters 13 and 14 are due by the class 1 week from now.

EXHIBIT 24
ABSOLUTE AND COMPARATIVE ADVANTAGE ILLUSTRATED IN TWO PRODUCTION POSSIBILITIES CURVES



CLASS 9

1. This is class #9 in the Econ111 economics course.
2. Your assignments for chapters 13 and 14 are due today.
2. Chapter 15 : readings from Chapter 15.
3. Chapter 16 : readings from Chapter 16.
4. The Assignments for Chapters 15 and 16 are due by Class #11. Those who want to do the extra credit work, should do the work described in Exhibit 6.

CLASS 10

1. This is class #10 in the Econ111 economics course.
2. In today's class we consider the material associated with chapters 17 and 18 in your textbook.
3. Chapter 17 : readings from Chapter 17.

4. We have discussed the topic of money supply now in a number of classes. You will recall how we had said there were various measures of money supply, with M1 being a more narrow measure and M3 being a broader measure. You will recall also how we had shown graphs of US money supply growth over time, as measured by M3, for instance. We had mentioned how price levels are influenced by money supply growth. We looked at graphs of price level increases over time, as measured by the CPI, or Consumer Price Index. CPI and the GDP deflator, you will recall, were the 2 ways of measuring price level increases. The CPI is determined each year by US government workers going out and finding the prices of a basket of goods and services. The GDP deflator is determined by taking the nominal GDP (or Gross Domestic Product) and dividing by the real GDP. So economists have ways of determining money supply and price levels, as well as changes in the money supply and price levels.

Let's now consider the mathematical relationship between the money supply and price levels of goods and services.

The Velocity of Circulation of Money

To do this, we must begin by defining a term called the velocity of money. You will want to look at Exhibit 25 to see how it is defined.

Velocity is defined as: V = GDP/Money Supply Measure or: V = GDP/M.

Velocity, V, represents the average number of times a unit of the money supply is spent during a certain period. For example, the US money supply at some point in the 1990s was approximately $1350 billion. The Gross Domestic Product, the most common measure of spending in our economy, was then approximately $7200 billion. Therefore, the average number of times a dollar was spent on goods and services included in GDP was about 5.40. So the velocity of money at the time was 5.4.

Velocity is determined by various factors, among others:

1. The stability of the value of money. If the value of money decreases (inflation) then people will be more likely to spend it more quickly and raise the velocity. The spending is mostly on consumer goods as opposed to capital goods though, because as inflation accelerates businesses know that any future earnings will have less value and they will be more reluctant to invest. Therefore, a greater velocity as a result of higher inflation is not desirable.

2. Transportation and technology advances. As it becomes easier to transfer and transport money, the money is more quickly available to re-spending and therefore the velocity increases. This increase in velocity is desirable, because it is accompanied by a process which increases the physical ability of businesses to produce.

3. The ability for people to save. When people have a greater ability to save (through banks and other financial institutions), and not hoard their money, the money becomes available to businesses and consumers (who borrow the money) for re-spending. In this case again, especially as the savings are used by businesses for production purposes, the higher velocity leads to greater economic activity.

The Quantity Theory of Money

Now let's consider the Quantity Theory of Money, and again you will want to refer to Exhibit 25.

Velocity was defined as: V = GDP/Money Supply Measure or: V = GDP/M.

Using cross multiplication, this equation can be rewritten as:

V x M = GDP

GDP is the quantity (supply) of goods times their prices, so: GDP = P x Sc. Substituting this into the equation we get:

V x M = P x Sc.

This equation is also called the equation of exchange, because the left side represents the volume of money which is used (exchanged) to pay for the right side, the volume of goods.

The quantity theory of money states that without any increase in Sc, and no or only small fluctuations in V (a realistic assumption), any increase in the money supply will translate into an equal increase in the price level. This is the same conclusion we reached in the chapter on inflation, *i.e.* that the only lasting cause of an increase in the general price level is an increase in the money supply.

4. Chapter 18 : readings from Chapter 18.
5. That concludes the review of material we need to go over in this class. You will recall in Exhibit 1 of the exhibits accompanying these lectures that it showed the resources needed for this course. Resources 5, 6, and 7 listed in Exhibit 1 help

prepare students who want to try to take the AP exam in macro-economics or micro-economics or both. At this point in the course you need to make sure to go ahead and start securing those resources, and even to start looking them over, if you plan to try to take an AP exam. Classes #13 and #14 will focus on the material in these resources, but it would be wise for students wanting to take an AP exam even now to begin to study them, so as to understand what will be expected on the AP exams.

6. The Assignments for Chapters 17 and 18 are due by the class 2 weeks from now. Those who want to do the extra credit work, should do the work described in Exhibit 7.

EXHIBIT 25
THE VELOCITY OF MONEY AND THE QUANTITY THEORY OF MONEY

The Velocity of Money:

$$V = GDP / \text{Money Supply Measure}$$

or

$$V = GDP / M$$

Velocity, V, represents the average number of times a unit of the money supply is spent during a certain period.

The Quantity Theory of Money:

$$V \times M = GDP = P \times Sc$$

GDP is the quantity (supply) of goods times their prices, so GDP = P x Sc. The equation above is often called the "equation of exchange".

CLASS 11

1. This is class #11 in the Econ111 economics course.
2. Your assignments for chapters 15 and 16, along with any extra credit work associated with them that you did, are due today.
3. In today's class consider material associated with chapters 19 and 20 in your textbook.
4. Chapter 19 is entitled the government's role in the economy.
5. Chapter 19 : readings from Chapter 19.
6. The Assignment for Chapters 19 is due by class #13. Those who want to do the extra credit work, should do the work described in Exhibit 8.
7. Let's now consider Chapter 20 material, surveying the history of economic thought.
8. Chapter 20 : readings from Chapter 20.
9. For the remainder of today's class, as well as in the next class, I would like to go into more detail concerning issues raised in Chapters 19 and 20 in your textbook.
10. I want to start by discussing what is called 'fiscal policy' and 'monetary policy'. Economists tend to break down how government may address the economy in 2 categories: fiscal policy and monetary policy.
11. Fiscal policy is changes in government spending and taxes to fight recession and inflation. In order to understand how fiscal policy affects economic conditions, it is helpful to understand what is called the Aggregate Supply/Aggregate Demand Model.
12. The Aggregate Supply/Aggregate Demand (AS/AD) Model is illustrated in Exhibit 26. (Explain Exhibit 26 in detail.)
13. Now using this AS/AD Model, and assuming for now that Keynes is correct that the Aggregate Supply curve is sloping upwards but not vertical, by increasing government spending, Aggregate Demand increases, resulting shift in Aggregate Demand from D_1 to D_2 as shown in the graph in Exhibit 26, leading to an increase in economic output, measured by real GDP. Lowering government taxes would have a similar effect, because then consumers and/or businesses would have more to spend, which would also increase Aggregate Demand. This is known as using fiscal policy to affect the economy.
14. One can see in this AS/AD Model of Exhibit 26 increasing Aggregate Demand tends to increase Price Level (sometimes also called inflation) as well real GDP. Increases in real GDP tend to lower worker unemployment. A British economist known as A.W. Phillips noticed how inflation and unemployment tend to move in opposite directions. This inverse relationship between inflation and unemployment therefore became known as the Phillips tradeoff. The Phillips Curve shown in Exhibit 27 shows this Phillips tradeoff. But this Phillips tradeoff is not always true. For instance, in the 1970s in the US the US economy experienced what is called stagflation: rising prices but recessionary conditions characterized by higher unemployment.
15. Having spoken some about fiscal policy, let's consider monetary policy.
16. Monetary policy is using changes in the supply of money to fight recession or inflation. Consider again the Quantity Theory of Money in Exhibit 25, recalling

the equation of exchange V x M = GDP = P x Sc . Classical economics assumed V and Sc were constant, so any changes in money supply simply led to changes in price level. But Keynes argued that Sc is not necessarily constant. So an increase in money supply can have an effect on output (ie, real GDP) as well as price level. His logic ran as follows: increase in money supply leads to decreases in interest rates which leads to increased borrowing and spending which leads to increased Aggregate Demand which leads to increases in real GDP.

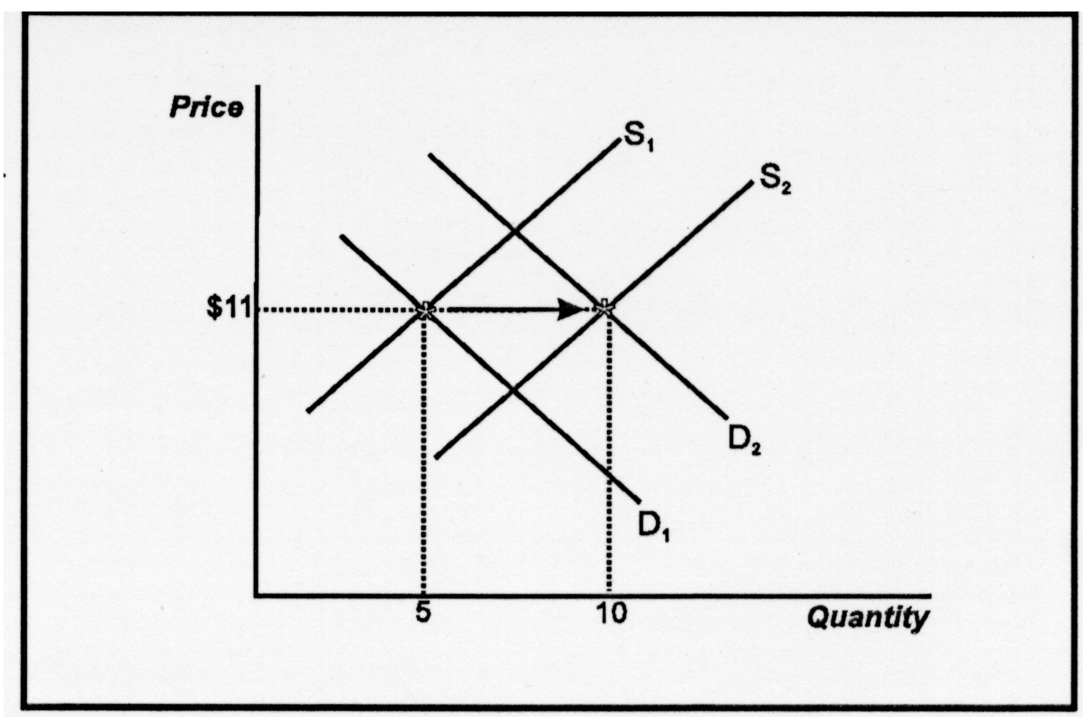
17. The Monetarist school of thought concerning monetary policy, founded by economist Milton Friedman, disagrees with both Classical economics and Keynesian economics. Unlike Classical economics, Monetarism acknowledges that V and Sc can change over time. But unlike Keynesian economics, Monetarism is skeptical of government's efforts to fine tune the economy by changing the money supply growth at different rates at different times. Monetarism argues that the government should increase money supply growth at a low fixed rate at all times.
18. Let's now consider the different economic schools of thought which are outlined in Chapter 20 in your textbook. Some of the major schools of economic thought include the Classical School (arguably founded by Adam Smith), the Marxist School (founded by Karl Marx), the Neo-Classical School, the Keynesian School (founded by John Maynard Keynes), and the Monetarist School (founded by Milton Friedman). One thing almost all of these schools have in common is that they were invented by secular humanists. While there are truths to be learned from them, there are major flaws with each principally arising because they do not take the Bible as the foundation of all human knowledge, and so not surprisingly deviate from it in notable respects. Let me give some examples. Adam Smith argues for laissez faire economics, in which for the most part the government steps aside, and does not necessarily enforce the Ten Commandments, especially the first table of the Ten Commandments. So what happens in this scenario? We see very well what happens with this in various modern Western economies. It results in the proliferation of businesses which do business on the Lord's Day, which encourage people to gamble and put money in lottos, and which promotes credit card debt to increases short term sales. And when one grocery store does business on the Lord's Day, it becomes very difficult for a business which remains closed on the Lord's Day to stay in business, because there are many customer sales lost. What then happens is that a people become progressively more immoral and progressively more economically stretched. This in turn leads to more crime, which in turn leads to the necessity for more government to stop criminal activity. Such an economy becomes increasingly dysfunctional and inefficient, compared with a society which would follow the Biblical model, in which government would seek to uphold and enforce the Ten Commandments. Or let's take Karl Marx's Marxist school of thought. It essentially does away with private property and promotes atheism, unlike the Biblical model. So what have we learned about the consequences of this Marxist economic model from examples like the former communist Soviet Union. Without private ownership, people are less motivated to work hard. This is further compounded by demoralizing effects of atheism, which teaches there will be no Day of Judgment

when all men will be judged by God. Or let's take both Keynesian and Monetarist schools of thought. Among other errors, both schools support the use of fiat currency rather than gold and silver as the medium of exchange. But has the history of human government really shown man is capable of exercising discipline when he has the power of creating money. Or has history rather shown that man's natural condition is depravity as the Bible teaches, and so man should not be trusted to be the creator of money? More could be said, but I think the lesson of history is that God's word is right, and systems of thought based on other foundations prove to be flawed.

19. This concludes class #11 in the Econ111 economics course.

EXHIBIT 26
THE AGGREGATE SUPPLY/AGGREGATE DEMAND (AS/AD) MODEL

The Supply and Demand graph below should look familiar to you: it is the supply and demand curves for a certain product, supposing shifts in supply and demand. But imagine instead that each S curve represented Aggregate Supply (AS) of all goods and services in an economy, and imagine that each D curve represented the Aggregate Demand (AD) of all goods and services in an economy. Furthermore, imagine that Price represented the overall Price Level of all goods and services (as represented by some price level measure like CPI), and imagine that Quantity represented the Real GDP (in other words, the output of goods and services in the economy). (Note: According to Keynesian economics the Aggregate Supply curve is sloping upwards like in the graph below, but according to classical economics the Aggregate Supply curve is perfectly vertical.) According to the AS/AD model, a shift in Aggregate Demand from D_1 to D_2, without any change in Aggregate Supply, would lead to an increase in price level as well as real GDP. (Things that can change Aggregate Demand include changes in business, consumer and government spending on goods and services.) And according to the AS/AD model, a shift in Aggregate Supply from S_1 to S_2, without any change in Aggregate Demand, would lead to a decrease in price level but an increase in real GDP. (Things that can change Aggregate Supply include changes in worker productivity, technology and resource availability.) And according to the AS/AD model, a shift in Aggregate Supply from S_1 to S_2 and a shift in Aggregate Demand from D_1 to D_2, would lead to an increase in real GDP without any change in price level.



CLASS 12

1. This is class #12 in the Econ111 economics course. In today's class we continue to consider issues related to material found in chapters 19 and 20 of your textbook.
2. The Assignment for Chapter 19 is due by class #13. Those who want to do the extra credit work, should do the work described in Exhibit 8.
3. The Assignment for Chapter 20 is due by class #14. Those who want to do the extra credit work, should do the work described in Exhibit 9.
4. Chapter 19 in your textbook discusses the role of government in the economy. We have noted in previous classes why the Bible suggests government should intervene in the economy at points, and not allow take a purely laissez faire stance. As you will recall, the Bible teaches that government has a role in upholding the principles of the Ten Commandments in commerce. So, for example, it is appropriate that government prohibit abortion services, prostitution, and Christian Sabbath desecration, and that it regulates pollution and unsafe conditions. Now as you might imagine, humanistic economists are not going to explain the rationale for government intervention in this way. I would like to spend some time now describing how they explain the need for government intervention. There is truth in what they say, but it is still inadequate.
5. Humanistic economists distinguish positive economics versus normative economics. Positive economics is economics incorporating the scientific method without any value judgments. For instance, based upon studies of the relation of inflation and unemployment, certain conclusions may be reached by induction. Normative economics, on the other hand, incorporates value judgments. For example, normative economics might say we ought to allow more inflation if we can reduce unemployment, based upon a value judgment concerning inflation and unemployment. Using this more humanistic terminology, instead of terms like divine moral law or the Ten Commandments, economists say that one reason for government intervention in the economy is because of normative judgments that free market outcomes are not always correct. For example, if Americans make a normative judgment that women are entitled to the same wage as men in a given occupation, then they might want the government to intervene not to allow businesses to do otherwise.
6. Another reason given for government intervention relates to externalities. Externalities are those social costs or benefits associated with an economic transaction that are not incurred by the buyer or seller in the economic transaction. For instance, let's say a steel plant in Pennsylvania sells steel to a car company in Michigan. And let's say this steel plant pollutes the air in Pennsylvania in the process of manufacturing the steel. The pollution is a social cost of the economic transaction, but neither the steel company nor the car company absorbs all the negative consequences of the pollution. There are many people in Pennsylvania who will experience the pollution who are in no way associated with the economic transaction. So the pollution is an example of a negative externality in this transaction. Government may intervene in the case of externalities in order to subsidize for positive externalities and to tax for negative externalities.

7. Another reason for government involvement in the economy revolves around the topic of public goods versus private goods. Some goods are said to be public goods, while other goods are said to be private goods. A private good is a good that has exclusion and distributive characteristics, whereas a public good is a good which has non-exclusion and non-distributive characteristics. Non-exclusion means it is difficult if not impossible to exclude someone from receiving the benefit, even if they do not pay. And non-distributive means it is difficult if not impossible to distribute to some and not to others. An example of a public good is national defense. Public goods are typically functions performed by governments. There are some quasi-public goods that have combined public and private good characteristics.
8. Another rationale given for government interference is economic stabilization. For instance, automatic stabilizers are government policies already in place that promote deficit spending during recessions and surplus budgets during expansions. Income taxes and antipoverty programs are examples of such automatic stabilizers. During recessionary times income taxes decrease and antipoverty programs increase, which have the effect of stimulating economic activity. But during prosperous times income taxes increase and antipoverty programs decrease which have the effect of dampening economic activity. So one purpose they purportedly serve is to reduce the extremes of business cycles.
9. Other reasons that have been given for government interference include provision for information (such as food labeling standards), income redistribution, and curtailing or regulating monopolies (such as through anti-trust actions).
10. Economists have tried to determine the optimal level of government interference. Exhibit 28 shows some of their findings. You will recall in past classes that we said that the level of output where a firm is most profitable is that point where Marginal Cost = Marginal Benefit. This is because that once Marginal Cost rises above Marginal Benefit, then each additional unit of output starts to decrease total profitability. Analogously, the optimal level of government interference is that point where Marginal Social Cost = Marginal Social Benefit. Exhibit 28 shows the definitions of Marginal Social Cost and Marginal Social Benefit, expressed in terms we have already discussed. Let's take an example to understand this. Suppose we have a steel mill that produces steel but also pollutes proportionate to quantity of steel produced. In this case:

Private Marginal Cost (MC) = the cost in terms of inputs like labor and material to produce each additional unit of steel

Marginal Social Cost (MSC) = Private Marginal Cost (MC) plus the additional harm that comes with the incremental level of pollution

Remember, pollution is the Negative Externality in this example.

Private Marginal Benefit (MB) = the revenue generated for each additional output

Marginal Social Benefit (MSB) = Private Marginal Benefit (MB) + the additional good that comes with the incremental level of employment in the community (such as lower crime)

In this case, the Positive Externality is said to be lower crime in the community.

As long as MSB is greater than the MSC, then it is good to increase output by more units. But once MSB = MSC, then that is the optimal level of production.

The government may choose to tax and subsidize businesses to reflect positive and negative externalities. For instance, government may tax polluters for each additional unit of pollution produced and it may offer subsidies to businesses which generate jobs in the town. The optimal level of tax or subsidy is the value of the externality, as shown in Exhibit 28.

11. Finally today I would like to discuss how government interference can affect factor prices. Factor prices are the costs associated with the Factors of Production. The three factors of production are land, labor and capital goods. Land includes land and other natural non-man made materials, such as raw materials, energy sources, and trees. Labor includes all forms of human productive effort, from blue collar to white collar to professional athletes. We will refer to all payments for labor as wages (even though it conventionally also includes salaries, bonuses, etc.). Capital goods represent the man-made machines, equipment, buildings and other capital goods used to produce consumer goods and other capital goods. Capital is the money often used to enable businesses to finance the purchase of capital goods. When businesses borrow money to purchase capital goods they pay interest to financial intermediaries or lenders.

Without government interference, prices of labor and land are determined by the supply and demand of these factors available in the market. The less land available, *i.e.* the less supply, the higher the price of the land, given a certain amount of demand. The more a certain labor is in demand, for instance, the talent of a highly skilled tennis player, the higher his or her wages. Changes in wage rates and prices of natural resources, such as land and raw materials behave according to price and quantity changes.

But government interference can affect the prices of labor and land. For example, the social security tax adds cost to the free market cost of labor. The tax effectively shifts the supply of labor to the left, so that the equilibrium point of quantity of labor demanded and supplied is less that it would otherwise be. In other words, it tends to depress employments levels. Property taxes have a similar discouraging effect on land purchases.

12. As mentioned in a previous class, resources 5, 6, and 7 listed in Exhibit 1 help prepare students who want to try to take the AP exam in macro-economics or micro-economics or both. At this point in the course you need to start seriously studying them, if you plan to try to take an AP exam. In the coming Classes #13 and #14 we will focus on the material in these resources. Let me suggest a way you might want to use Barron’s AP economics exam preparation book, for

example. Each chapter covers a topic that will probably be found in the AP economic exams. You might briefly review the material in a chapter, then try to answer the questions at the end of a chapter. If you do well in answering the questions, then proceed to the next chapter. But if you do not do so well, then take time to review the chapter contents more thoroughly.

13. This now concludes class #12 of the Econ111 course.

CLASS 13

1. This is class #13 in the Econ111 economics course.
2. Your assignments for chapter 19, and extra credit work associated with it, are due today.
3. We had mentioned in a previous class resources 5, 6, and 7 listed in Exhibit 1 that help prepare students who want to try to take the AP exam in macro-economics or micro-economics or both. You should already be going through Barron's or Princeton Review's books that prepare students for taking the AP economics exams, if you are planning to take the AP economics exams. These books also have sample AP economics exams, which you will want to try. In addition, resources 5 and 6 provide sample exam questions prepared by the College Board, which you will want to try. Finally, you should read exam information in resources 5 and 6 listed in Exhibit 1.
4. In this class and the next class we shall be going over miscellaneous topics that may be covered on the AP economics exams but have not been covered much in previous classes, for those who may be taking one or both of the AP economics exams. For those who will not be taking the AP economics exams, it gives you a preview of sundry topics that will be covered if you take economics courses in college.
5. So let's go over some miscellaneous economics information associated with macro-economics.
6. At Exhibit 29 you will see various formulae associated with GDP, or Gross Domestic Product. The first formula shows how GDP is calculated using the expenditures approach, the second formula shows how GDP is calculated using the income approach, and the third formula shows how per capita GDP is calculated. Then there are assorted formulae showing how GNP, national income, personal income and disposable personal income are calculated. In the US, the Bureau of Economic Analysis within the US Commerce Department calculates GDP on a quarterly basis.
7. At Exhibit 30 you will see various formulae associated with Inflation and Unemployment. Notice the 2 measures often used in calculating inflation: the CPI and the GDP Deflator. Also notice the official inflation rate as calculated by the US government. The nominal interest rate charged on loans consists of 2 components: the real interest rate plus the expected inflation rate. In the US, the Bureau of Labor Statistics reports unemployment statistics. Exhibit 30 shows how the unemployment rate is calculated. There are various classes of unemployed, and these classes were discussed in your textbook. It should be noted that there is one class of unemployed that does not show up in the unemployment statistics, the so called discouraged workers or hidden unemployed. These are they unemployed that have simply given up looking for work. To be considered "unemployed" for the Labor statistics, one has to be out of work but looking for a job.
8. At Exhibit 31 you will see various formulae associated with Money and Banking. [Go through the details of this Exhibit.]
9. At Exhibit 32 you will see various formulae associated with the topic of Economic Growth. Economists often attribute 2 general factors affecting economic growth: resource availability and productivity of those resources. Resources, or factors of production, include land, labor and capital. Land consists of natural resources.

Capital is the term economists use for plant and equipment. Exhibit 32 shows examples thus of increasing resource availability. There are a number of ways to increase productivity of resources. Exhibit 32 shows examples. [Go through the details of this Exhibit.]

10. At Exhibit 33 you will see various formulae associated with Foreign Exchange.
11. This now concludes class #13 of the Econ111 course.

CLASS 14

- This is class #14 in the Econ111 economics course. This is the final class lecture of the course.
- Your assignments for chapter 20, and extra credit work associated with it, are due today.
- In this class we continue going over miscellaneous topics that may be covered on the AP economics exams but have not been covered much in previous classes.
- In previous classes we have explored ways in which governments can intervene in otherwise free market economies. One way that governments have sometimes intervened is by setting price ceilings or price floors in particular markets for goods and services. Exhibit 34 illustrates price floors and price ceilings. A price floor is a government-mandated price above the free market equilibrium price. In the example at Exhibit 34, suppose the free market equilibrium price of a gallon of milk were $6/gallon, but the government intervened and said the price per gallon of milk were a minimum of $8 per gallon. At the price floor in this example, what would be the quantity supplied and what would be the quantity demanded? This price floor would result in a surplus of quantity supplied over quantity demanded. What would the government do about this surplus? Sometimes they destroy product, or sometimes they give it away at a subsidized price to foreign nations. In another example at Exhibit 34, suppose the free market equilibrium price of a standard apartment rental unit were $6000/year, but the government intervened and said the price per standard rental unit were a maximum of $4000 per unit. This is called rent control, and various city governments over history have imposed such rent controls, because many people complained about high rent prices. At the price ceiling in this example, what would be the quantity supplied and what would be the quantity demanded? This price ceiling would result in a shortage of quantity supplied under quantity demanded. The end result of such a scheme is that some people get apartments at very low prices, while others are literally left out in the cold. Sometimes these people have to find another community in which to live, making their commute to work longer, etc. Sometimes governments will ration available apartment units to their political favorites. As you perhaps can tell, it seems to me that such price ceilings and price floors are ill-conceived ideas. One common form of price floor are minimum wage laws. Such laws set a floor on wages paid. So anyone whose economic productivity is not greater than the floor will not be employed, thus tending to increase the unemployment rate, especially as the minimum wage is set at a higher level.
- In previous classes we already considered the issue of elasticity. We looked at price elasticity of demand, income elasticity of demand and cross price elasticity of demand. One we did not mention is price elasticity of supply. It is simply the % change in quantity supplied divided by the % change in price. A good in which there was a large % increase in quantity supplied with a very modest % increase in price would be said to have a high price elasticity of supply. A 10% increase in quantity supplied with a 10% increase in price would be said to have a unit price

elasticity of supply. A 5% increase in quantity supplied with a 10% increase in price would be said to have a more inelastic price elasticity of supply.

- Economists have tried to analyze the economics of consumer choice. Economists use the term 'utility' to describe the satisfaction that a consumer receives in consuming a given product. Economists measure utility in dollars, on the premise that people will be willing to pay for something up to the level of their satisfaction. If I would be willing to pay $100 for an old shoe, then $100 must be the level of satisfaction or utility I derive from it. Marginal utility is the satisfaction gotten from the last unit purchased and consumed of a given product. For most material products, people obtain diminishing levels of utility for additional quantities of a given product. In theory the utility-maximizing rule is that the marginal utility divided by price of each product should be the same across the spectrum of products purchased. In the study of consumer choice, there is a term you will read about called "consumer surplus". Consumer surplus is the difference between the utility gained from all of a certain product purchased versus the market price paid for them. The utility of all the units purchased of the product is typically higher than the market price paid, hence the surplus. Once my marginal utility in purchasing an additional unit of some product is less than its unit market price, then I stop buying the product.
- Let's now consider the issue of price discrimination. In order to maximize profits, firms would like to be able to engage in price-discrimination. Price-discrimination is the charging of different customers with different prices for the same product. Since different customers have different utility levels for a given product, a firm could make more profit if it charged different customers at different prices. The customer that was willing to buy the product for $100 would be charged $100, while the customer that was willing to buy the product for $1000 would be charged $1000. Such price discrimination is difficult for a firm to implement because of such factors as it is difficult to separate and identify customers in different utilization categories and there are product re-sales (sometimes called secondary markets).
- 'Efficiency' is another term economists often use. Economists try to identify how a certain economy can be most efficient. They use a term called "Pareto Efficiency" to describe the optimal point for a society when any further improvement for some comes at the expense of others. The term 'technological efficiency' measures the output per dollar of input expenditure. Any improvement in this ratio of output to input will allow us to make more efficient use of resources. The term "allocative efficiency" involves the channeling of resources to their most productive and desired uses.
- In previous classes we considered the topic of production and costs. Total physical product (also called simply total product) is the output of a firm in the product it produces. Average physical product (also called simply average product) is total physical product divided by units of input. For example, suppose the firm is a dressmaker. With 10 employees the firm can make 100 dresses, so the average physical product is 10. If the firm hired one additional employee it could make 120 dresses, so the marginal physical product (also called simply marginal product) in this case would be 20. Recall too our discussion about total

costs, fixed costs, and variable costs. Remember also that we mentioned how economists differentiate accounting costs from economic costs. Whereas accounting costs consider only the actual dollars produced to produce something, economic costs also consider the opportunity costs. For example, let's say I am a shoemaker and spending 2 hours making a pair of shoes with materials costing \$10. The accounting costs would simply be the \$10, but the economic costs would add to it the amount I as a shoemaker could have made working 2 hours for another employer. Let's say I could make \$8 per hour, or \$16 then for 2 hours. So the economic costs of making the pair of shoes is \$10 in materials and \$16 in opportunity cost, for a total economic cost of \$26.

- During this economics course we looked at 4 different product markets: perfect competition, monopolistic competition, oligopoly and monopoly. Exhibits 35 through 38 explore firms in each of these product markets and how they maximize profits.
- Exhibit 35 shows the case in an industry with perfect competition. In this type industry, we have to differentiate the supply and demand curves for the industry overall versus for a particular firm in the industry. The top graph shows an example for the industry overall, and the bottom graph shows it for a firm in the industry. Notice in the top graph that the equilibrium price is \$6 per unit. That means that for a firm in this perfectly competitive industry that the demand price is always \$6, no matter how many units the firm produces, as can be seen in the bottom graph. According to the bottom graph, the marginal cost equals the marginal revenue when the firm has produced 3 units, so 3 units is the profit-maximizing output for the firm. At that price, the Average Total Cost equals Average Revenue, so economic profits are 0. Zero economic profits is the long run equilibrium situation in a perfectly competitive industry.
- Exhibit 36 shows the case in a monopolistic industry. Certain questions are asked in this exhibit. Take time to try to answer these questions and I shall return to them later in the class to give you the answers.
- Exhibit 37 shows the case for a firm in an industry characterized by monopolistic competition. Certain questions are asked in this exhibit. Take time to try to answer these questions and I shall return to them later in the class.
- Exhibit 38 shows the case for a firm in an industry characterized by oligopoly. An oligopolist has a very unusual kinked demand curve. Economists have argued this is the case because oligopolists find it very difficult to raise prices without losing much market share, but they do not pick up much market share by lowering prices because their competitor readily lowers their price as well. Certain questions are asked concerning the oligopolist's graph in this exhibit. Take time to try to answer these questions and I shall return to them later in the class.
- An oligopolist faces a situation where it faces one other competitive rival in the industry. Given such a situation, mathematical game theory can help us to know what is the profit-maximizing strategy for an oligopolist. In game theory, a payoff matrix helps to show the alternatives faced by each competition. At the bottom of Exhibit 38 you can see 2 payoff matrixes. The dominant strategy for a particular firm is the strategy which yields the highest profitability, no matter which strategy the firm's competitor responds with. Certain questions are asked

concerning the oligopolist's payoff matrixes in this exhibit. Take time to try to answer these questions and I shall return to them later in the class.

- Ok, now let's go back and try to answer the questions posed in the exhibits.
- Exhibit 36 shows the case in a monopolistic industry. Profit is maximized at that output level where marginal cost comes to equal marginal revenue. Notice that the marginal revenue curve lies below the monopolist's demand curve, which is why the demand curve is continuously downward sloping. Marginal cost comes to equal marginal revenue in this case at 2000 units of output, where the cost is around $7 per unit. At 2000 units of output the Demand curve indicates the market price is $8 per unit. So the monopolistic firm enjoys economic profits of $1 per unit. Remember that in a perfectly competitive industry, in contrast, in the long run perfectly competitive firms enjoy 0 economic profits. In the example of Exhibit 36, 0 economic profits occur at an output level of 3000 units and at a unit price of $6. So 1000 less units are produced, because a monopolist will pursue a strategy to maximize its profits. Economists speak of a term called "dead weight loss" to describe the economic loss to society resulting from monopoly instead of perfect competition.
- Exhibit 37 shows the case for a firm in an industry characterized by monopolistic competition. Its graph looks a lot like the graph for a monopolist, but with one very important difference: at its profit-maximizing output, its product sales price equals its average cost, which means the firm enjoys zero economic profit. Normally, in the long run, firms in an industry characterized by monopolistic competition enjoy zero economic profit. Otherwise, competitors flock in and take away customers. In the example at Exhibit 37, the firm maximizes its profit where marginal cost = marginal revenue, or 2000 units of output. In contrast, if this were a perfectly competitive industry, the firm would maximize its profit at an output of 3000 units.
- Exhibit 38 shows the case for a firm in an industry characterized by oligopoly. In the example at Exhibit 38, the firm maximizes its profit where marginal cost = marginal revenue, or 3000 units of output.
- Looking at the payoff matrixes for the 2 oligopolists in Exhibit 38, in scenario 1 the dominant strategy for Oligopolist #1 is Strategy 2, and the dominant strategy for Oligopolist #2 is Strategy 2 . In scenario 2 the dominant strategy for Oligopolist #1 is Strategy 2 , and the dominant strategy for Oligopolist #2 is Strategy 1 . I should mention here that a scenario is possible in which there is no dominant strategy, because both strategies have a pro and con result dependent upon how the competitor responds.
- One final topic we should mention are resource markets. Resources include the factors of production like land, labor and capital. Such resource markets experience what is called derived demand. Derived demand is the demand for a resource such as labor which is derived from the product that the resource helps to produce. Exhibit 39 shows some definitions and formulae you should become familiar with.
- This now concludes this Econ111 economics course. We have seen how there are many truths that even humanistic-based economics has been able to discover and systematize. Yet, we have also seen in this course how humanistic-based

economics is deeply flawed. Because of it unwillingness to be based upon the foundation of God's word, humanistic-based economics is ultimately unable to advise a course that will lead to long term economic prosperity. There simply can be no long term prosperity of any kind so long as man resides under God's wrath. And we have seen how humanistic-based economics is unable adequately consider the moral and spiritual dimensions of economics. It is necessary to build an economic philosophy upon God's word. Hopefully this course has helped you to see the contours of such an endeavor.

SECTION SEVEN: CLASS DISCUSSION NOTES

DISCUSSION OUTLINE FOR CLASS #1

Admin-

Your course grade will be calculated as the weighted average of 80% times regular assignment scores plus 20% times extra credit work.

DISCUSSION OUTLINE FOR CLASS #2

DISCUSSION OUTLINE FOR CLASS #3

DISCUSSION OUTLINE FOR CLASS #4

DISCUSSION OUTLINE FOR CLASS #5

Start going through Exhibits 15-23 and 35-38.

DISCUSSION OUTLINE FOR CLASS #6

Admin – Assignments to turn in this week

Continue going through Exhibits 15-23 and 35-38.

Important to remember that the profit-maximizing optimizing production level is where MR=MC.

DISCUSSION OUTLINE FOR CLASS #7

Continue going through Exhibits 15-23 and 35-38.

DISCUSSION OUTLINE FOR CLASS #8

DISCUSSION OUTLINE FOR CLASS #9

DISCUSSION OUTLINE FOR CLASS #10

DISCUSSION OUTLINE FOR CLASS #11

DISCUSSION OUTLINE FOR CLASS #12

DISCUSSION OUTLINE FOR CLASS #13

DISCUSSION OUTLINE FOR CLASS #14