Econ 380, Section 2
Fall Semester 2007
Tuesday and Thursday, 12:00 p.m. - 1:15 p.m.
Krannert G010

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Course Text No text required.

Course Web Site http://www.krannert.purdue.edu/faculty/gjerstad/Econ380.html

I recommend that you read this entire syllabus. The course objectives and approach will closely follow the narrative in the Course Overview section. You should read that to determine if the course content meets your needs and interests. All of the main policies regarding homework, exams, and grading are also described in this document. With 110 students registered in two sections of the course, many personal schedule conflicts arise during the semester. The purpose of the policies outlined here is to provide a workable administrative structure for the course that will be applied equitably to all students, rather than an ad hoc approach applied on a case by case basis.

Course Overview

Econ 380 is an introduction to money, banking, and credit. The purpose of the course is to examine the economic function of money, the role of banks and other firms and institutions in credit creation, the effect of credit creation on the supply of money, and ultimately, the effect of the money supply on the scope and the stability of economic activity.

Economics differs from applied management: it focuses on concepts and principles. But it also forms the analytic foundation of all management fields. This course follows this practice, both in its emphasis on concepts and in its demonstration of the economic motivation for the development of management practices. Course topics can usefully be separated into four main areas. The first is a comparison between barter and commodity money. The second is the development of credit and its role in trade. The third topic is the development of negotiable or transferable credit instruments, and their role in the development of a circulating paper money. The last topic is the development over the past two centuries of institutions that control credit creation in order to insure the solvency of the banking system and to stabilize economy growth.

Barter, which is a form of exchange in the absence of money, is a natural starting point for a course on money, since we can compare the performance of a market without money to one with money. When barter is the only means of carrying out exchange, coordination problems quickly multiply as the number of commodities and the number of agents increase. Commodity monies of gold and silver emerged at least as early as the seventh century B.C. and were the predominant form

of money for the next 2000 years. The first topic in this course is a comparison between simple economies based solely on barter and similar economies that utilize a commodity money. Barter and exchange with coins leave few traces in the historical record, so we will use the exchange economy model and experiments with that model to investigate exchange with barter and compare the results to exchange with a commodity money.

Historically and logically, the next developments after commodity money are credit markets, banks of exchange, and simple banks of deposit. Credit and banking often leave a more substantial trace in the historical record, since credit transactions, transfers of funds in banks, and bank deposits all need to be recorded. Both the Greeks and the Romans used banks, but little evidence of their banking activities is known.

After the collapse of the western Roman empire, commercial activity reverted to such a rudimentary state that financial intermediation all but disappeared in Europe. When trade began to revive in the early medieval period, almost all forms of financial intermediation had to be reconstituted. Fortunately, enough commercial records exist from near the beginning of the economic revival that began around 1100 A.D. to permit a reasonably accurate reconstruction of the primary steps in the development of banking practices. Several Italian city-states, especially Genoa and Venice, engaged in Mediterranean trade and financed much of the overland trade with northern Europe between 1100 and 1300. As this trade increased, two critical needs arose.

In the earliest phase of medieval commercial development, the landed class were the primary investors in trade. Few, if any, others had sufficient wealth to invest. Merchants would often borrow funds to purchase a cargo, travel to a foreign port, sell their goods and then purchase other goods for the return trip. After their return they would sell the goods acquired in the foreign port and repay the loan. Profits from these ventures were extraordinary. By the end of the twelfth century, many of these merchants accumulated more wealth than they could personally employ productively. Other less established merchants sought investment funds, so some of the wealthier merchants began to engage predominantly in trade finance. This can be viewed as the origin of commercial banking.

A second need also arose in connection with trade. Between about 1100 and 1300, much of the northern trade was conducted at the fairs of Champagne, where merchants regularly gathered from all over Europe. Merchants brought goods to the fairs and returned with other goods. It would be costly and risky to carry money to use to conduct trade: carrying money would tie up resources that could otherwise be used to acquire additional merchandise, and it would also add risk since the money might be stolen in transit. If all merchants arrive at the fairs without money though, merchants would have to resort to barter. Money changers, who originally had changed foreign for domestic coins, began to offer short term credit to buyers and credit the accounts of sellers at the fairs. When the fair closed, all accounts would be cleared and remaining balances would be repaid or carried over as short-term loans to the next fair. This system, which facilitated exchange with little money, proved so successful that it was adopted also in cities.

After over a century of vastly increased trade, changes in the organization of commerce occurred rapidly at the end of the thirteenth and beginning of the fourteenth centuries. As the volume

of trade increased, competition narrowed price differences across the Mediterranean and northern Europe, which decreased profit margins. When the difference between the purchase price in one location and the sale price at a distant location is small and variable, and the eventual sale price is unknown when a merchant makes his purchase, he might incur a loss on the trade. This situation became increasingly common as shipping capacity reached a critical threshold in the second half of the thirteenth century. This situation created a need for a reorganization of trade. Merchants needed to make decisions about what commodities to purchase and where to sell them with more information than they had in the earlier era of traveling merchants. Within about fifty years, the system of itinerant merchants gradually gave way to permanent partnerships with branch offices all over Europe. Branch offices supplied the main office with price information, and also carried out purchases and sales in the distant cities where the branch offices were located. This change to business organization created new problems of firm organization and control: the solutions to these problems transformed business fundamentally.

Permanent partnerships required accurate account summaries for increasingly complex activities. Bookkeeping evolved both personal accounts, with ledgers of transactions for each supplier, customer, and branch office, and impersonal accounts for expenses and capital. By the middle of the fourteenth century, the system had developed into the double-entry bookkeeping system that remains the basis of accounting. Finance too changed in an important and permanent way. In the earlier period, a merchant would take a loan, purchase a cargo, travel to his destination where he would sell his goods, and then make a new purchase which he would bring back to his point of departure to sell. With the proceeds of the sale in his home, he would repay the loan. This was a simple form of finance. The more complex form of business organization required movement of funds independently of movement of cargoes. If a merchants' balance builds up at one branch office while good business opportunities exist at another, the need arises for a transfer of funds from one location to another. The *bill of exchange*, which is a portable financial instrument, met this need. Most modern credit instruments are derived from the bill of exchange, so this is an important element of the history of money and banking as well as of contemporary commercial practice.

Other problems also arose from the change in firm organization. Once merchants no longer traveled with their cargoes, but instead sent them to their agents abroad, common carriers developed to carry freight. Since merchants no longer traveled with their wares, they also sought a means to reduce the risk associated with shipping. Marine insurance was developed to transfer risk to underwriters. These five changes – permanent firms with branch offices, double-entry bookkeeping, portable financial instruments, marine insurance, and common carriers – which are collectively known as the "commercial revolution of the thirteenth century," became the basis for the development of mercantile capitalism, which was the dominant form of commercial organization in Europe until it was transformed into industrial capitalism almost six hundred years later. Among all of the developments during the commercial revolution, the most important for monetary history is the bill of exchange, which much later became the basis of modern money.

Once bills of exchange became widespread, there were two major developments that led to a cir-

culating paper currency. The first of these steps was the concept of a negotiable financial instrument. Originally, the bill of exchange specified a *deliverer* (who provided commodity money and received the bill in return), a *taker* (who received money and drew up the bill as a promise of future payment), a *payor* (typically a partner of the *taker*) who made payment on the bill to the *payee* (typically a partner of the *deliverer*) when the bill came due. A negotiable monetary instrument is such a bill that can be assigned to a third party. In this case, the payee who received the bill could sell the bill to a third party who would then receive payment from the payor. As simple as this step appears, it took three centuries from the time that the bill of exchange first appeared until these bills became transferable and commercial law codified the concept of assignability or negotiability.

The next step in the development of paper money was a note payable to the bearer. These notes were issued informally in the second half of the seventeenth century by the English goldsmiths. Soon afterward bank note issues became more formal when the Bank of England, which was chartered in 1694, began to issue paper notes payable to the bearer, i.e., to whoever brought the note to the bank for redemption in commodity money such as gold or silver. In effect, this was the beginning of paper money as we know it. For the next 250 years, paper money was, with only a few notable exceptions, a claim on commodity money – typically gold or silver coins – held by the bank that issued the paper money. In England and the U.S., banks of issue were private but government chartered until the twentieth century.

Private banks of issue greatly increased the supply of money, but also led to economic instability, since the supply of money affects the level of economic activity. As the money supply expands and contracts, so does the level of economic activity. In the United States, which experienced the largest economic growth during this period, economic fluctuations were substantial. In the U.S. during the nineteenth century associations of banks, many state governments, and the federal government created a variety of practices that contained the most severe effects of adverse economic developments, but the underlying causes of economic instability remained unaddressed until the middle of the twentieth century. Banking panics were common throughout the nineteenth century in the U.S., even during the National Banking era (1864 – 1914). As a result of the banking panics and economic instability, the Federal Reserve Banks were created in 1914.

The Federal Reserve centralized control of the currency, but there were two flaws with the original Fed system. The first problem with Federal Reserve control of the money supply probably caused the great depression. In the 1920s many influential members of the Fed believed in the "Real Bills" doctrine, which argued that the money supply should be contracted during an economic slowdown because the need for credit by businesses is directly related to their output. This theory has since been discredited and discarded. The second problem with the Fed, which was subtler and more structural, didn't appear until after the recovery from the depression and the WWII expansion. Up until the Korean War, the money supply was effectively controlled by the Treasury. From the time that the Federal Reserve banks were created in 1914 until early 1951, the Treasury set interest rates. The Federal Reserve banks were required to purchase any debt that the Treasury could not sell to investors at the interest rate that the Treasury offered. Since the Federal Reserve bank pays for

Treasury debt with Federal Reserve Notes, these purchases increase the money supply. As a result, the amount of federal government debt that was turned into U.S. currency as the result of Fed purchases of U.S. Treasury securities fluctuated in a way that the Fed could not control.

After the Treasury-Fed accord of 1951, the Fed was able to fix the amount of Treasury issued debt that it would purchase; the remaining debt was sold on the market. Since the Fed could then choose the amount of debt that it purchased, it gained control the amount of currency (Federal Reserve Notes) that it issued. The Treasury-Fed Accord of 1951 arguably initiated the modern era of monetary history. In the initial phase of Fed control of the money supply, the Fed primarily was interested in measures of the money supply and attempts to control the money supply. This approach was quite successful under William McChesney Martin, who was Chairman of the Board of Governors of the Federal Reserve from 1951 to 1970. It was less successful under Arthur Burns, who was Fed chairman from 1970 to 1978. Inflation was rapid in the 1970s, primarily as a result of oil price increases and failed efforts to exploit the Phillips curve. Starting in 1978 – when Burns was replaced as Fed chairman by Paul Volcker – the Fed changed its approach to monetary policy. As chairmen of the Fed, Paul Volcker and Alan Greenspan have both followed policies that emphasize price stability. Prior to his appointment as chairman of the Fed, Ben Bernanke advocated explicit adherence to price stability with inflation targeting, which involves central bank announcements of inflation targets.

These developments have had great impact on economic stability, even through adverse economic events, such as currency collapses in Asia and Russia, stock market declines, corporate scandals, and oil price shocks. These events have often precipitated economic instability in the past, so the developments of modern monetary economics clearly have been of great help to modern economies. The goal of this course is to understand the role of money, banking, and credit in economic activity, and also to indicate how modern central banks stabilize economic activity.

Evaluation

Your grade in Econ 380 will be determined by your performance on the best two of three 100 point exams, either four or five homework assignments that total to 100 points, and a comprehensive 200 point final exam. The exam dates are listed on the course schedule at the end of the syllabus. Homework due dates will be announced in class and posted to the web site when the homework is distributed. Requests for brief extensions to homework due dates can sometimes be accommodated, but almost all students want solutions sets for homework. Homework cannot be accepted for credit after the homework solution set is posted to the course web site.

The provost's office has recently advised faculty to add the following statement to our syllabi. "In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances."

Reading list

Papers and lecture notes will be assigned as course readings. Readings will be announced in class

and posted to the course web site when they are assigned. Assigned readings will be discussed during lectures.

Returned work

Homework and exams should be picked up in a timely manner. I will post a notice to the course web site on the day that a homework or an exam is first returned. After four class periods, I'll discard uncollected work. You should retain your homework or exams in case there is any discrepancy between the score you believe you received and the recorded score. Without the original exam or homework, no change can be made to a recorded score for any reason. If you don't pick up the homework within four class periods and the work is discarded, then of course it won't be possible to review the grade and recorded score.

Policy on Makeups

Please look at the scheduled evening exams in the Course Schedule section of this syllabus. Your attendance at two of these three exams is required, and if you miss one exam that exam will have to be taken as a drop exam. No makeup exam will be given.

Typically for each evening exam, several students have two evening exams scheduled at the same time, or two exams that overlap. I will accommodate these situations by scheduling an alternative time either immediately before the scheduled evening exam, or immediately after the scheduled exam (but not both). That will be from 5:45 p.m. until 7:00 p.m. or from 9:00 p.m. to 10:30 p.m. (The earlier time is almost always preferred by everyone with a conflict.) If you have a conflict between two evening exams, you should know this early in the semester (provided that the other professor announces the exam at the beginning of the semester). Let me know as soon as possible if you have a conflict so that I can arrange for a room and a proctor for the alternative exam time. The deadline for scheduling an alternative exam time is one week before the exam date. After that time, you'll need to either take the exam at the regularly scheduled time or use the exam as your drop exam.

Your lowest score from the three exams will be dropped. If you miss an exam that score will be dropped. You don't need to explain your absence from one exam to me. The average scores on the three exams will almost surely differ, so if you miss an exam, it may turn out that you miss the easiest exam. No adjustment to scores will be made to account for differences between average scores on the three exams. If you miss two exams, you will need to have a valid reason for missing both exams, such as illness or family emergency, and you will need to provide documentation for both absences to me. In that case, your score on the exam that you take will be multiplied by two to get your total exam score. If you miss the final exam, you will need to have a valid, documented reason for your absence, and you will need to take a makeup final exam.

Academic Integrity

I encourage you to study with other students and to discuss class material among yourselves, including homework assignments. You may work on homework problems together with other stu-

dents, but your write up of the assignment should be your own. During quizzes and exams you will not be permitted to use books or notes or communicate with other students. Any violation of academic integrity will result in failure of the quiz or exam and potential for failure in the course. For a more thorough definition of academic dishonesty and a discussion of its repercussions, please see http://www.purdue.edu/odos/administration/integrity.htm.

Course Schedule

The course schedule on the next two pages includes the topics that we'll cover. The schedule also includes exam dates and holidays. It is important that you look at the exam dates to make sure that you'll be available on those dates to take the exams.

Aug. 21	Introduction
Aug. 23	"Economic Organisation of a POW Camp"
Aug. 28	Barter and commodity money: coincidence of wants, market depth, price dispersion, and the number of markets; Arbitrage
Aug. 30	Experiments on barter
Sept. 4	The exchange model
Sept. 6	The exchange model; Fisher's equation of exchange; monetarist economics
Sept. 11	Review
Sept. 13	NO REGULAR CLASS (due to evening exam)
Sept. 13	**Exam 1** (FRNY G140; 7:00 p.m. – 8:15 p.m.)
Sept. 18	Credit instruments at the fairs of Champagne: bills of exchange and lines of credit
Sept. 20	Trade expansion, price convergence, and profit margins
Sept. 25	The commercial revolution
Sept. 27	Perpetual bonds
Oct. 2	The bill of exchange, negotiable credit instruments, and circulating currency
Oct. 4	Credit creation by early banks of issue: English goldsmiths (1650 - 1670); Bank of England (1694 – present)
Oct. 9	OCTOBER BREAK
Oct. 11	Fractional reserve banking
Oct. 16	NO REGULAR CLASS (due to evening exam)
Oct. 17	**Exam 2** (MTHW 210; 7:00 p.m. – 8:15 p.m.)
Oct. 18	Banks of issue: the Bank of the United States (1792 – 1812); the Second Bank of the United States (1816 – 1836) and Jackson's Bank War; State banking (1812 – 1816; 1836 – 1864)
Oct. 23	Economic growth, asset prices, and financial contagion
Oct. 25	The panic of 1857
Oct. 30	The New York Clearinghouse Association

Nov. 1	The random withdrawal model and the asymmetric information model of financial crises (applied to the banking panics of the national banking era
Nov. 6	Creation of the Federal Reserve
Nov. 8	The "Real Bills" doctrine and the great depression
Nov. 13	NO REGULAR CLASS (due to evening exam)
Nov. 14	**Exam 3** (LYNN 1136; 7:00 p.m. – 8:15 p.m.)
Nov. 15	The great depression
Nov. 20	Post war expansion and inflation
Nov. 22	THANKSGIVING HOLIDAY
Nov. 27	The Treasury-Fed accord of 1951
Nov. 29	Federal Reserve Bank control of debt monetization
Dec. 4	Monetary growth targets (1951 – 1978); price stabilization (1979 – 2007)
Dec. 6	Review (last day of instruction)
Dec. 12	Final Exam (RHPH 172; 3:20 p.m. - 5:20 p.m.)