INTEGRATING FINANCIAL ECONOMICS INTO THE HIGH SCHOOL CURRICULUM

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ABSTRACT

Money, credit, interest rates, and inflation are concepts basic to any financial decision. While high school teachers recognize the importance of financial economics, actual instruction in the area is lacking. The subject matter is considered uninteresting and the teachers may be ill prepared to teach it. The ideas can be presented in a non-threatening manner by incorporating financial economic concepts into a historical and political framework.

This paper presents ideas for integrating these financial concepts into a time period typically short-changed in the high school curriculum, 1890-1915, but which is a fertile time for financial markets. Using Hugh Rockoff's 1990 article "The 'Wizard of Oz' as a Monetary Allegory," the debate over the free coinage of silver, and the creation of the Federal Reserve System, the concepts can be engagingly presented to the students. The lesson stresses critical thinking in an outcome-based format. Materials incorporated are from the National Council on Economic Education, the Federal Reserve System, and the Internet.

INTRODUCTION

The increasing complexity of today's working environment warrants a renewed look at integrating financial economics into the high school curriculum. Introducing students to basic economic ideas and providing the tools to comprehend and analyze the policies and problems of our society are basic to economic sensibility. The interest rate is an important price that confronts every individual who invests or borrows. Activities in financial markets directly affect personal wealth, the behavior of businesses and consumers, and the overall economy. When teachers do incorporate economics into history or government classes, they tend to stay away from topics in financial economics. Likewise, many teachers who teach economics in the high schools are more accurately described as history or government teachers. They do not have the background or inclination to rigorously expose their students to economic concepts. By introducing teachers to how

economic factors and situations affected political and historical decisions, economics can then be introduced to students.

ECONOMIC EDUCATION REQUIREMENTS

While thirty-eight states have guidelines for teaching economics in high school, only sixteen states require that schools offer an economics class and only thirteen states require students take an economics class for graduation (NCEE, 1999). Texas has guidelines for economics and requires students to complete a course for graduation. While this is applaudable, two problems exist. The first is that most schools offer a one-semester economics class where both micro and macro topics are covered. The time limitation hints that the course only provides cursory overviews of ideas (Buckles & Watts, 1998). The second and more important concern is that the teachers may not be adequately trained to teach economics (Walstad, 1992).

In Texas, all new teachers who receive certification in the social studies composite must have at least six hours of economics credit, the two principles courses. However, teachers who entered the profession before the regulation may not have had an economics class. The social studies certification program is being redesigned with two tracks, history and social studies composite. The new history track requires no economics. A concern is that teachers may receive an emergency certification, which allows them to teach economics while completing the course requirements. However, if a teacher instructs just one class outside of her certification fields, the teacher is not required to have had a class in that area. For many teachers, the field is economics.

The National Council on Economic Education (NCEE) constructed voluntary content standards for teaching economics in the primary and secondary schools. The goal of the standards is to guide the teaching of economics and the concepts to which students should be exposed. In 1998, Texas replaced its guidelines for instruction, called the Essential Elements, with revised standards, called the Texas Essential Knowledge and Skills (TEKS). The TEKS are similar to the essential elements but stress outcomes instead of facts for defining successful instruction. The revisions come at a time when Americans are apparently not competent in basic economics. The National Council on Economic Education's *The Standards in Economics Survey* results show that both adults and students fail miserably at the most basic concepts (NCEE, 1999). A section of the survey examining financial economic concepts show that a majority of adults and students have inadequate knowledge on money, interest rates, and inflation. The respondents did not know the basic relationships among interest rates, banks, and household behavior and among inflation and borrowing/lending decisions. The American Savings Education Council's 1999 survey of young people support the result that

students do not know as much as they should on financial matters (ASED, 1999).

FINANCIAL PANICS AND THE GOLD STANDARD: PEDAGOGY

The authors looked for a way to introduce basic financial economic topics to the high school teachers from our region in order to address this shortcoming in knowledge. The teachers admitted spending little time on the subject for two reasons. First, the demands to cover all of the material for the TEKS forced them to reduce coverage of other areas. The time period and subject matter of financial markets and the gold standard was omitted or reduced in coverage by the teachers because they felt uncomfortable teaching it. The authors believed that if the material could be presented to the teachers in an informative and engaging manner with materials already prepared for the teachers' use in the classroom, they would include the material in their curricula.

The time period at the turn of the last century is an exciting time for financial markets. The debate over the gold standard and the free coinage of silver, bank panics, and the establishment of the Federal Reserve are basic to much of economic and political history. U.S. government courses frequently ignore or give only a passing reference to the Federal Reserve System. However, the Fed is an important and active member of our political and economic system. When dealing with subjects that are more difficult, a hook needs to be provided. Hugh Rockoff's 1990 article "The 'Wizard of Oz' as a Monetary Allegory" is a fascinating discussion of this time period. Teachers and students are already familiar with the storyline. Their exposure to the underlying symbolism brings the conflict between farmers and bankers, inflation and deflation, and a gold standard and a bimetallic standard alive. The yellow brick road becomes not only the path to Oz but also the path to basic financial economic concepts. In essence, the application teaches the theory.

The unit can be divided into two parts with a follow-up part on Federal Reserve actions during the Great Depression. The National Council on Economic Education's 1995 publication *United States History: Eyes on the Economy, Volume Two* (EOTE), has a unit on this time period. The unit, which provides the basis for our extensions, includes sections on inflation and deflation, the gold standard, and the Federal Reserve.

Why Is The Yellow Brick Road Yellow?

The first part of the unit centers on the debate over the free coinage of silver. The unit chronology starts with a discussion of what is money and ends with the "Wizard of Oz." The goal of this lesson is for the students to understand the

relationship among inflation, interest rates, debt and prices. First, present the main conflict; farmers wanted to add silver to the money supply to produce inflation, but the bankers did not want this to happen. By starting with the conflict, the audience is aware of and looking for the conflict in the background material.

The background begins with a discussion of what is money and that it is part of every transaction. The circular flow provides a visual illustration of the role of money. The Federal Reserve Bank of Dallas' publication "The Economy Circle" provides overheads and other materials the teachers may find useful. Why we use money naturally extends to a discussion on fiat versus commodity money. Commodity money can be explained via an example of the gold standard. If the teacher has the time, an active lesson with a buyer in the U.S. and a seller in Japan can demonstrate that a rise or a fall in exchange rates sets in motion forces to return the exchange rate to par. More advanced classes can do a mathematical example while divided into groups. Otherwise, the class can follow along with the teacher as she presents an example. The teachers in our region did not feel comfortable teaching the gold standard. We presented a worksheet that provided the methodology for understanding the gold standard (Exhibit 1). The teachers could use the worksheet themselves or expand upon it. The example demonstrates the role money plays in determining the price level.

A historical perspective is the next subject as the teacher presents the economic, historical, and political conditions of the U.S. from the 1870s through the 1890s. The main idea presented is that the increase in the world food supply coupled with a rate of growth of money that was less than the growth rate of output caused deflation. Farmers were especially hard hit for their product prices were falling while their debt payments remained the same in nominal terms. The effects of inflation and deflation on borrowers and lenders are the next ideas. An example demonstrating how inflation helps the borrower and hurts the lender while deflation helps the lender and hurts the borrower presents a basic but valuable lesson in personal finance. The example in the EOTE is too long for some teachers. Instead, we provided a shorter version showing the effects of inflation and deflation on farmers with a fixed amount of debt (Exhibit 2). The main idea is presented faster. We discussed with the teachers how the conflict between borrowers and lenders has always existed. The lesson in the EOTE does not draw out the negatives of persistent inflation. We added this idea at the end of the worksheet to prevent some students from gaining the false impression that inflation is always useful.

The division between creditors and borrowers is tied to the struggle between farmers and bankers in the late nineteenth century. The Populist and Democrat parties, led by William Jennings Bryan, fight the Republican Party and McKinley for the Presidency. To bring the fight alive we presented the gold standard conflict via Hugh Rockoff's article, "The 'Wizard of Oz' as a Monetary Allegory" with its

metaphors (Exhibit 3). In our presentation, we asked questions and then let the story answer them. For instance, some questions were as follows:

, Who or what do the main characters – Dorothy, Toto, Scarecrow, Tin Man and the Cowardly Lion – represent?
, Why is William Jennings Bryan cowardly?
, Why are the witches of the East and West "wickedly" but the witches of the North and South are "good"?
, What would increasing the money supply do to the farmers' ability to pay off their debts?
, Why would the bankers be against this?
, What are some of the symbols for gold? For silver?
, Why is the year 1873 significant?

In our approach we wanted to explicitly use economics as a problem-solving tool. We asked what should be done – add silver to the money supply or not? This led to a lively debate on the pros and cons of inflation. While most wanted to help the farmers, they were hesitant to actively encourage inflation. For an added dimension we included information on how other countries would react to the use of silver in the money supply. We then had the group vote on what should be done. Our suggestion is to have the students, either alone or in groups, write a paragraph explaining what should be done and why.

After the vote taking, what actually happened is next presented. Surprisingly, very few of the teachers actually knew what occurred. In essence, the situation in the U.S. is resolved with an influx of gold causing inflation coupled with a crop failure in Europe that increases demand for U.S. crops. We recommend ending the discussion with the quote from Bryan's autobiography (quoted in Rockoff's article) that demonstrates that the influx of gold and the desire for a bimetallic standard are similar solutions to the farmers' problems.

In order to encourage the teachers to present the lesson to their classes, we provided our own synopsis of the situation and story to the teachers. An *Economics Minute* example is an additional resource on the topic (MacDonald, 1999).

How Can A Bank Panic?

Lesson three of the unit in EOTE presents the establishment of the Federal Reserve. The discussion can be tailored to either the historical or political aspects. Government classes may find this section particularly useful because the Federal Reserve System is created out of the desire to end financial panics. The decentralized nature of the system refers back to a basic tenet of American government. Because fiscal policy is usually discussed more than monetary policy,

this lesson provides an introduction to the institution that conducts monetary policy. The teachers admitted to spending only a little time on the Federal Reserve. Partly, the methodology behind bank panics worried some teachers. This concern is what we wanted to address.

The goal of this lesson is for students to understand why bank panics are detrimental to the economy and why the Federal Reserve System was created. Bank panics may have already been mentioned from the gold standard lesson. Now they are explicitly defined. We presented a simple flow diagram to show how a panic spreads through an economy. The teachers welcomed the explicit nature of the diagram.

> As the panic begins$ savings decline$ deposits decline$ loans decline$ investment declines$ production declines$ jobs decline$ income declines$ further decline in consumption and savings$ some banks start to have trouble$ call in loans$ confidence in the economy and banks begin to decrease$ people pull money out of some banks, even good banks$ further decline in savings$ smaller banks pull their money out of larger banks$ cash flow problems widen for businesses and banks$ banks call in more loans or sell stocks$ not all loans can be repaid immediately$ stock prices decline for no one is buying$ further decline in confidence$ bank panic deepens and widens.

To further show why bank panics are so important, we prepared a table (Exhibit 4) showing the number of bank suspensions from that time period (U.S. Census Bureau, 1975). The numbers clearly show that the number of banks having difficulty increases around the panic years of 1893 and 1907.

Lesson three in the EOTE covers the Panic of 1907. We presented the background and the methodology of the panic by giving each person an occupation with the goal to survive the panic. As the panic spread from one group to the next group, it became clear to them how a panic is contagious. Next, we asked the question, "What should be done to stop the panic?" The audience understood that people must stop withdrawing their money from the banks and start spending again or that there must be additional money available to the banks to compensate for the panic. In our mock town of business people we created, not one person was willing to not withdraw his/her money.

The actions of J.P. Morgan and his group of bankers in providing liquidity into the marketplace are presented as the solution to the panic. This naturally leads into a discussion on the role of government in preventing bank panics. The creation

of the Federal Reserve System in 1913 as an institution to stop bank panics and provide confidence and liquidity to the marketplace is the next topic. The main aspects of the Federal Reserve including its structure and decentralized nature are introduced. If it hasn't already been discussed, the role of banks in financial intermediation in the economy, specifically, how it aids growth and adds efficiency should be included. The Federal Reserves' role of lender of last resort is also presented. An addition to the discussion should be the importance of confidence in the central bank and the banking system as it relates to a smooth functioning market. This presents the Federal Reserve as a political entity to the students. For those classes with more advanced students, an example of the fractionally backed reserve system demonstrates how banks create money. An examination of the Quantity Theory of Money cements the relationship between money and prices. An additional resource is "The Key to the Gold Vault," which discusses the gold storage at the New York Federal Reserve (New York Bank, 1998).

The Federal Reserve system has wonderful Internet sites, which allow for active participation as the students surf the sites. We recommend a scavenger hunt over the Federal Reserve sites where answers to certain questions can be found at the sites. The students are divided into teams and surf to find the answers. The exercise can also be constructed as a race or as a competition to find the most right answers. We provided an introductory list of questions and where the answers can be found to assist the teachers in getting started (Exhibit 5). In order to facilitate the hunt, we recommend using the map of the Federal Reserve districts as the starting point (http//www.bogfrb.fed.us/otherfrb.htm).

Why Is The Depression Great?

Unit seven in EOTE is about the Great Depression. It is very light on the Federal Reserve. The hook for this section is the question: "If the Federal Reserve's job is to act as lender of last resort, why didn't it?" Our material was culled from Frederic Miskin's *The Economics of Money, Banking, and Financial Markets*, 5th edition. The goal of this unit is to recognize that the Federal Reserve is imperfect and a political not just an economic institution. The EOTE has a list of the number of banks closing during the Great Depression. The three main reasons for the poor job done by the Federal Reserve are presented. First, small and rural banks went bankrupt first. This was initially viewed positively by the larger banks for their competition was decreasing. Also, the first set of bank failures was concentrated among banks with bad banking practices. The Federal Reserve considered these failures to be warranted. Finally, there was infighting among the members of the Federal Reserve Board. Other members resented the power of the New York Federal Reserve Bank. While the New York Bank wanted to provide money to the

smaller banks, it was outvoted. This political component of the Fed is missing from the EOTE lesson.

Additional topics include the Federal Deposit Insurance Corporation, which was established in 1933 to provide federal insurance on bank deposits and provide confidence in the banking system. A movie tie-in is Jimmy Stewart's *It's a Wonderful Life*, which shows the human side of a bank panic. Two other publications that can be used in the discussion of the bank panics are "Panic of 1907" and "Closed for the Holiday: The Bank Holiday of 1933" both published by the Federal Reserve Bank of Boston.

After the discussion on the Federal Reserves' actions during the Great Depression, we presented its actions after the stock market crash in 1987. The different response by the Fed and the following stock market rally cemented the importance of the Federal Reserve's job as lender of last resort. The inclusion of the Federal Reserve in the discussion of the Great Depression reinforces the information on the Federal Reserve. The criticisms of the Fed during this time demonstrate to the students that institutions are not always able or willing to solve the problems of the economy. The political dimensions of the Fed's actions illuminate how politics can affect the behavior of institutions.

CONCLUSION

By taking a little discussed time period of American history and introducing the conflicts over the gold standard, inflation and deflation, bank panics and the Federal Reserve, the basics of financial economics can be examined. Students are exposed to the role of money and banks in the economy, prices and inflation/deflation, and lenders versus borrowers. The insertion of lenders and borrowers exposes students to a basic idea of personal finance. Adding economics into history and politics allows the teachers to incorporate ideas in a manner that is non-threatening both to themselves and to the students. The goal of outcome-based education is addressed because the students first are introduced to a historical situation and the players, then given the economic background to analyze the situation and try to reach a solution, and finally, the actual policies or occurrences are presented. The students are able to evaluate the historical and political choices based on economic conditions in the appropriate time period. We have tried to include active learning ideas whenever possible. To assist the teachers, we developed worksheets and provided tables to facilitate the lessons.

If students are introduced to ideas of financial economics in high school, they may be better equipped to make financial decisions after they graduate. By formulating the discussions on inflation, interest rates, the gold standard and the Federal Reserve in the context of the Wizard of Oz and the presidential elections of 1896 and 1900, the ideas are not only grounded in their historical place but also

appear logical and are more easily understood. The unit integrates economics, history, politics, mathematics, and literature. The role of inflation with debtors and creditors is shown to be a classic battle that existed then and now. By presenting the free silver discussion and the formation of the Federal Reserve as potential solutions to then current economic situations, the students are introduced to economics as a means to solve problems. This is a crucial step to critical thinking and economic sensibility.

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Exhibit 1: The Gold Standard and Prices

1. The current exchange rate between Japan and the United States is: one dollar is worth one hundred and twenty yen. Each dollar can also be exchanged for one ounce of gold. One hundred and twenty yen can also be exchanged for one ounce of gold. This is called a ________________.

2. If you wanted to buy a new CD player from Sony, a Japanese company, that costs 11,400 yen, how much would it cost you in dollars? ________.

3. Suppose that the yen appreciates (increases in value) so that one dollar is now only worth 110 yen. The CD player is still the same price in yen. How much will it cost you to buy the CD player in dollars? ________.

4. If you exchange dollars for yen at the new exchange rate and buy the CD player, you pay $__________ or Yen _________ for the CD player. Does Sony receive more Yen for the CD player?_____________.

5. Instead of exchanging dollars directly for yen, what could you do? __________________ ____.

6. If you exchanged $95 for gold in the United States, how many ounces of gold would you have? ________. If you exchanged the gold in Japan for yen, how many yen would you receive?__________. Can you buy the CD player?____________.

7. If many people exchange dollars for gold, send the gold to Japan, exchange the gold for yen, what happens to the supply of gold in the Unites States? _____________ And in Japan? ____________________.

8. An increase in gold reserves _________ the money supply. A decrease in gold reserves ___________ the money supply.

9. An increase in the money supply _________ the price level in the country. A decrease in the money supply __________ the price level in the country.

10. For the example above, the price level in the United States ___________, while the price level in Japan ___________. A yen _________ in value versus a dollar. This forces the exchange rate to revert back to 120 yen for $1.

Exhibit 2: The Effects of Deflation and Inflation on the Value of Debt

1. A farmer produces 100 bushels of grain per acre on his farm. The price per bushel is $0.50. What is his income per acre? ____________

2. The farmer has debt on the land of $10 per acre. His cost of living is $40 per acre. Can he cover is bills?_____ His bank account shows a change of $_________ .

3. Deflation occurs and prices fall by 20%. The price per bushel of grain is now $ _______. The farmer's income is $__________. The farmer's cost of living is now $_________ per acre. The cost of debt for the farmer is $_________ per acre. The farmer's total expenses are $__________ per acre.

4. Can the farmer cover his bills?______. His bank account shows a change of $_________.

5. If instead of deflation, inflation occurs and prices rise by 15%. The price per bushel of grain is now $_______. The farmer's income is $_______ per acre. The farmer's cost of living is now $_________ per acre. The cost of debt for the farmer is $_________ per acre. The farmer's total expenses are $__________ per acre.

6. Can the farmer cover his bills?_______. His bank account shows a change of $________.

7. Did inflation or deflation help the farmer the short-run?_________.

8. How much did the banker receive as a debt payment under each scenario? ____________. Under which scenario was the money that the banker received worth the most?_________.

9. Why does an economy not want inflation to be too high or last too long? ______________ ____.

10. Why does an economy not want deflation to be too great or last too long? _____________ ____.

Exhibit 3: Main Symbolism of "The Wizard of Oz"	
Symbol	Meaning
Dorothy	America
Toto	Prohibition Party
Kansas	Western State and site of 1900 Democratic convention
Cyclone	Free silver movement
Oz	Gold, symbol for an ounce
Scarecrow	Western Farmer
Tin Woodsman	Unemployed Working Man
Cowardly Lion	William Jennings Bryan
Yellow Brick Road	Gold
Emerald City	Washington, D.C.
Silver Shoes	Silver
Wicked Witch of the East	Bankers of the East and Grover Cleveland
Good Witch of the North	Region where Bryan's running mate hailed
Emerald Palace	The White House
Green-Colored Glasses	View the world through money interests
Seven Passages and Three Flights of Stairs	The Crime of 1873, the legislation that eliminated the coinage of silver
Wizard	Marcus Alonzo Hanna, chairman of the Republican Party
Wicked Witch of the West	William McKinley
Water/Rain	Inflation
Good Witch of the South	Region of the country sympathetic to the free silver movement
Dorothy's shoes are gone when she awakens back in Kansas	Influx of gold in the late 1890s and crop failures in Europe ended the free silver movement
	Source: Rockoff, 1990

Exhibit 4: Year and Number of Bank Suspensions					
Year	# of Banks	Year	# of Banks	Year	# of Banks
1909	79	1901	69	1893	496
1908	155	1900	36	1892	83
1907	91	1899	36	1891	62
1906	53	1898	67	1890	37
1905	80	1897	145	1889	18
1904	128	1896	155	1888	33
1903	52	1895	124	1887	25
1902	54	1894	89	1886	20
Source: U.S. Bureau of the Census, 1975					

Exhibit 5: Scavenger Hunt on the Internet	
Question	Internet site
Which Federal Reserve District has the largest geographic area?	Main map page
In which Federal Reserve District are we located?	Main map page
In which state are two Federal Reserve Banks located?	Main map page
How many members are on the Board of Governors?	Board of Governors
Who is Chairman of the Federal Reserve System? What year did he start this job?	Board of Governors
Which district Federal Reserve Bank president always sits on the Federal Open Market Committee?	Board of Governors
How far underground is the gold stored?	New York – general publications
If you bought an item in 1952 that cost $1.00. How much would the item cost in 1999?	Minneapolis
What has trading done to our money over time?	Atlanta – monetary museum
What are the three C's of credit?	Chicago – educator page
Who benefits and who is hurt from a strong dollar?	Chicago – educator page
Which colony issued the first paper money in the U.S.?	San Francisco – American currency exhibit
How can one detect counterfeit money?	Secret Service – know your money
Why does Abraham Lincoln face right on the penny while all other portraits of U.S. Presidents on coins face left?	U.S. Mint – fun facts about the U.S. Mint