Key Council on Economic Education & Federal Reserve Education A.P. Resources

Today’s “Conductor”: Karen O. Kokernak, MBA
Courtesy of the Maryland Council on Economic Education
Our mission is to assure that Maryland’s school children leave high school equipped with the economic, financial literacy and decision-making content and skills they need to make informed, rational decisions as consumers, workers, citizens, savers, investors and participants in the global economy.
The Maryland Council on Economic Education Concerto

- Maintain an updated website www.econed.org
- Sponsor signature programs
  - Stock Market Game™
  - The Financial Literacy Summit
- Assist with curriculum writing
- Provide professional development for educators
Today’s Composition Objective:

- Provide and model lesson plans that address content areas most commonly missed by students on the A.P. macro test
  - Content Covered:
    - Money Multiplier
    - Money Creation
    - The Fed & its Tools
    - Monetary Policy
    - Interest Rates

- Offer an overview of both Council on Economic Education and Federal Reserve Resources
Objectives:

1. Define the equation of exchange.
2. Define the variables in the equation of exchange.
3. Explain how changes in the money supply are translated into changes in nominal GDP, prices & output.

What are the 3 basic functions of money?

1. 
2. 
3. 
What are the 3 basic functions of money?

1. Medium of Exchange
2. A Standard of Value (Unit of Account)
3. Store of Value

Essential Question:

- Why do you think it is important for the Federal Reserve, the nation’s central bank, to know the size and rate of growth in the money supply?
  
  a. What are the effects if the money supply grows too slowly?
  
  b. What are the effects if the money supply grows too rapidly?
Unit 4: Lesson #1 Activity 35
What’s All This About the Ms? (A Variation)

Terms:
Money Supply
M1
M2
M3
Equation of Exchange (MV)
Aggregate Demand (PQ)

Activity:
1. Define the money supply.
2. Have students define M1, M2, & M3.
3. Tell students that the Fed is most interested in keeping track of M1 & M2. (*price stability)
4. Let’s count the money supply.
5. Distribute different types of assets &/or financial instruments.
“Money supply is commonly defined to be a group of safe assets that households and businesses can use to make payments or to hold as short-term investments.”

Source: Federal Reserve Board of Governors

- “Monetary Base is defined as the sum of currency in circulation and reserve balances (deposits held by banks and other depository institutions in their accounts at the Federal Reserve).

- M1 is defined as the sum of currency held by the public and transaction deposits at depository institutions (which are financial institutions that obtain their funds mainly through deposits from the public, such as commercial banks, savings and loan associations, savings banks, and credit unions).

- M2 is defined as M1 plus savings deposits, small-denomination time deposits (those issued in amounts of less than $100,000), and retail money market mutual fund shares.”

- M3 includes M2 plus longer-term time deposits and money market funds with more than 24-hour maturity. The exact definitions of the three measures depend on the country.


*Source: Financial Times, [http://lexicon.ft.com/Term?term=m0,-m1,-m2,-m3,-m4](http://lexicon.ft.com/Term?term=m0,-m1,-m2,-m3,-m4)
Unit 4: Lesson #1 Activity 35
What’s All This About the Ms?

- Name a type of money that serves primarily as a medium of exchange.

- Name a type of money that services primarily as a store of value.

- With the use of credit cards becoming more prominent & the availability of credit broader than ever, why are credit cards not included in the Ms?

- Why is it difficult for the Fed to get an accurate measure of the money supply?

- Why must the Fed continue to develop new ways to track the money supply?
Unit 4: Lesson #1 Activity 35
What’s All This About the Ms?

- Name a type of money that serves primarily as a medium of exchange? Currency, coin, debit cards or checkable deposits

- Name a type of money that services primarily as a store of value. Savings Account or money market mutual funds account

- With the use of credit cards becoming more prominent & the availability of credit broader than ever, why are credit cards not included in the Ms? Credit Cards are short-term loans & not directly subtracted from checking accounts.

- Why is it difficult for the Fed to get an accurate measure of the money supply? The volume of transactions can range into the trillions on a daily basis. The inputs are constantly changing as banks make new loans & people repay loans ahead of schedule.

- Why must the Fed continue to develop new ways to track the money supply? Technological innovation in financial services industry & profit maximizing behavior on part of commercial banks.
Why do we care about the supply of money? Or, better yet, why does the Federal Reserve care?
Unit 4: Lesson #1 Activity 35
What’s All This About the Ms?
Federal Reserve Chart on Current Money Market Rates

Money Market Rates

Source: Board of Governors & Financial Times via Haver Analytics & Bloomberg
Unit 4: The Monetary Equation of Exchange (Activity 36)

The Equation of Exchange & the Velocity of Money

\[ M \times V = P \times Q \]

How money relates to the real economy

The "equation of exchange":

- The quantity of money.
- The price level of the real stuff we buy.

The velocity of money; the number of times per year money gets spent on real stuff.

Total transactions in the economy; the total amount of real stuff we buy.

\[ MV = PT \]

C + I + G + NX = PQ = MV (Quantity Theory of Money)

(Review Activity)

The Money Market and Monetary Policy
CEE’s H.S. Economics, Lesson #22
The Case of the Gigantic $100,000 Bill

Essential Question:

▪ How do loans made by depository institutions (banks) affect the size of the money supply?

Concepts:

▪ Excess Reserves
▪ M1
▪ Money Creation
▪ Money Multiplier
▪ Money Supply
▪ Required Reserves
▪ Reserve Requirements

This lesson is also online: Federal Reserve Bank of Philadelphia or www.federalreserveeducation.org
Reserve requirements are the portions of deposits that banks must maintain either in their vaults or on deposit at a Federal Reserve Bank.
CEE’s H.S. Economics, Lesson #22
The Case of the Gigantic $100,000 Bill

<table>
<thead>
<tr>
<th>Month</th>
<th>Reserve Balance Requirements</th>
<th>Reserve Balance Maintained 1</th>
<th>Interest Rates Paid (in percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>Balance maintained to satisfy reserve balance requirements 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Balance maintained to satisfy reserve balance requirements 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>Balance maintained that exceed the top of the penalty-free band 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Balance maintained that exceed the top of the penalty-free band 2</td>
</tr>
<tr>
<td>Sept. 2013</td>
<td>67,226</td>
<td>73,944</td>
<td>65,472</td>
</tr>
<tr>
<td>Oct. 2013</td>
<td>66,713</td>
<td>73,299</td>
<td>65,068</td>
</tr>
<tr>
<td>Nov. 2013</td>
<td>70,483</td>
<td>77,564</td>
<td>65,421</td>
</tr>
<tr>
<td>Dec. 2013</td>
<td>69,029</td>
<td>75,849</td>
<td>65,112</td>
</tr>
<tr>
<td>Jan. 2014</td>
<td>75,901</td>
<td>80,556</td>
<td>68,298</td>
</tr>
<tr>
<td>Feb. 2014</td>
<td>77,220</td>
<td>85,067</td>
<td>68,574</td>
</tr>
<tr>
<td>Mar. 2014</td>
<td>78,471</td>
<td>86,303</td>
<td>72,145</td>
</tr>
<tr>
<td>Apr. 2014</td>
<td>80,503</td>
<td>88,338</td>
<td>72,145</td>
</tr>
<tr>
<td>May 2014</td>
<td>82,906</td>
<td>91,213</td>
<td>74,683</td>
</tr>
<tr>
<td>June 2014</td>
<td>81,443</td>
<td>89,605</td>
<td>73,285</td>
</tr>
<tr>
<td>July 2014</td>
<td>84,566</td>
<td>93,054</td>
<td>76,117</td>
</tr>
<tr>
<td>Aug. 2014</td>
<td>86,399</td>
<td>91,605</td>
<td>78,216</td>
</tr>
<tr>
<td>Sept. 2014</td>
<td>81,883</td>
<td>90,096</td>
<td>73,660</td>
</tr>
</tbody>
</table>

Two weeks ending 2

| Aug. 28, 2014 | 81,079 | 90,188 | 72,746 | 2,748,483 | 83,666 | 1,648,618 | 0.25 | 0.25 |
| Sep. 21, 2014 | 92,526 | 101,794 | 83,299 | 2,778,102 | 101,617 | 2,671,485 | 0.25 | 0.25 |
| Oct. 1, 2014  | 75,309 | 82,615 | 67,504 | 2,740,521 | 82,501 | 1,715,203 | 0.25 | 0.25 |
| Oct. 22, 2014 | 86,783 | 93,485 | 78,073 | 2,719,149 | 95,218 | 2,633,034 | 0.25 | 0.25 |

Terms to Know

- **Bank reserves**: Currency held by banks in their vaults plus their deposits at Federal Reserve Banks.

- **Required reserves**: Funds that a depository institution must hold in reserve against specified deposits as vault cash or deposits with Federal Reserve Banks.

- **Excess reserves**: Amount of funds held by a depository institution in its account at a Federal Reserve Bank in excess of its required reserve balance.

- **Interest**: The price of using someone else’s money.

- **Interest rate**: The percentage of the amount of a loan that is charged for a loan.

**Federal funds market**: The market in which banks can borrow or lend reserves, allowing banks temporarily short of their required reserves to borrow from banks that have excess reserves.

**Federal funds rate**: The interest rate at which a depository institution lends funds that are immediately available to another depository institution overnight.

**Federal Reserve System**: The central bank system of the United States.
The Fed’s Toolbox

Tools that the Fed has in its toolbox to influence money supply/interest rates:

- **Discount rate:** The interest rate charged by the Fed to banks for loans obtained through the Fed’s discount window.

- **Open-market operations:** The buying and selling of government securities through primary dealers by the Fed in order to influence the money supply.

- **Reserve requirements:** Funds that Banks must hold in cash, either in their vaults or on deposit at a Reserve Bank.

- **Interest on reserves:** Interest paid by Federal Reserve Banks on required and excess reserves held by banks.

Monetary policy:

The actions of a central bank to influence the cost and availability of money and credit to achieve the national economic goals.
Open Market Operations Simulation

The Federal Reserve (teacher)

- The Federal Reserve gets money-reserves of $60,000 and the Federal Reserve Portfolio Tracker.

Primary Dealers (three students)

- Primary dealers buy and sell government securities from the Federal Reserve.

Investors (six students)

- Each investor gets a $10,000 Government Security and an Investor Balance Sheet.

Banks (six students)

- Each bank gets two deposit slips.

Treasurer (one student)

- Treasurer gets the Treasurer’s Balance Sheet for the Class.
## Investor Balance Sheet

<table>
<thead>
<tr>
<th>Initial</th>
<th>End of Round 1</th>
<th>End of Round 2</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Bank Balance Sheet</th>
<th>Assets (money/reserves)</th>
<th>Liabilities (deposits)</th>
<th>Net Assets (assets - liabilities)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>End of Round 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>End of Round 2</td>
<td></td>
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</tbody>
</table>

## Federal Reserve Portfolio Tracker

<table>
<thead>
<tr>
<th>Initial</th>
<th>End of Round 1</th>
<th>End of Round 2</th>
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</thead>
<tbody>
<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Government Securities</th>
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<tbody>
<tr>
<td>$0</td>
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</tbody>
</table>
Expansionary monetary policy: Actions taken by the Federal Reserve to increase the growth of the money supply and the amount of credit available.
**Contractionary monetary policy:** Actions taken by the Federal Reserve to decrease the growth of the money supply and the amount of credit available.
Terms to Know

- **Central bank**: An institution that oversees and regulates the banking system and quantity of money in the economy.

- **Dual mandate**: The Federal Reserve’s responsibility to use monetary policy to promote maximum employment and price stability.

- **Price stability**—A low and stable rate of inflation maintained over an extended period of time. The Fed has a longer-run goal of 2 percent inflation.

- **Maximum employment**—The Fed does not have a specific unemployment target but regularly publishes a forecast for the longer-run unemployment rate.

Interest paid on Reserves another monetary policy tool!

Financial Services Regulatory Relief Act of 2006
Not implemented until October 6, 2008

www.reffonomics.com;
www.reffonomics.com/GRAPHS.html
Additional Teaching Resources from CEE & the Federal Reserve

The Council on Economic Education

- Econ Ed Link (lessons & videos)  
  [www.econedlink.org/](http://www.econedlink.org/)

- CEE Site; to order publications  
  [www.councilforeconed.org/resources/](http://www.councilforeconed.org/resources/)

- Virtual Economics- comprehensive library of all CEE pubs on thumb drives

- For MCEE Professional Development Opportunities & Our Blog, Knowledge Pay$ Off, [www.econed.org](http://www.econed.org)

- Don’t forget to “Like Us” or “Follow Us” on:

  ![Facebook](facebook.png)  ![Twitter](twitter.png)  ![Pinterest](pinterest.png)

The Federal Reserve

- [FRED](http://www.research.stlouisfed.org/fred2/) – Access to Data, & Charts...  
  Students/Teachers can create their own charts too!  
  [www.research.stlouisfed.org/fred2/](http://www.research.stlouisfed.org/fred2/)

- Monetary Policy Online Course  

- Economic Lowdown Series (podcasts/videos)

- [Economics in Person Series](http://www.frbsf.org/education/teacher-resources/economics-in-person) (videos that feature experts on timely topics)  
  [www.frbsf.org/education/teacher-resources/economics-in-person](http://www.frbsf.org/education/teacher-resources/economics-in-person)

- 5E Educator- The Monetary & Fiscal Policy Two Step  
  [https://www.richmondfed.org/publications/education/5e_educator/2013/spring_summer_2013.cfm](https://www.richmondfed.org/publications/education/5e_educator/2013/spring_summer_2013.cfm)

Welker’s Wikinomics, Exchange Rates, Current & Capital Accounts-  
[http://www.econclassroom.com](http://www.econclassroom.com)
Thanks for attending today. Please take time to complete the program evaluation form @ the end of the workshop.

Karen Kokernak, MBA
Program Specialist
Maryland Council on Economic Education