

Money, Monetary Policy & the Central Bank: The Fourth Order of Government

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Introduction

In this lecture I will do four things. First, I will briefly review: (a) the uses & forms of money; (b) the demand for money; (c) the supply of money; and, (d) money market equilibrium. Second, I will consider the objectives and tools of contemporary monetary policy as well as its interaction with fiscal policy (tax and spend). Third, I will sketch the differing histories of the three largest central banks in the Anglosphere. Fourth, I will consider the so-called ‘shadow banking system’ that emerged during the 1980s with relaxation of post-Great Depression banking regulations as well as the role of risk *vs.* ignorance and speculation *vs.* enterprise to the Great Recession of 2008. I should note, however, that the lecture focuses on the domestic supply and demand for money and does not consider the foreign exchange market where one nation’s currency is a commodity like pork bellies and computer chips.

1. Money

Money is arguably the magic of contemporary culture. As pieces of metal, paper, plastic or electronic records it transforms itself into a car, television, computer, food or shelter. As Joel Grey’s character in the movie *Cabaret* sings: “Money, money, money makes the world go round, makes the world go round, makes the world go round!” And while money won’t buy you love it can make a good down payment. In fact, money is one of humanity’s greatest social innovations.

(a) Uses

Money has four principal uses as:

- (i) a generally accepted medium of exchange for goods and services. The key here is ‘generally accepted’. For example, at the campus computer store if I put down a Japanese ten thousand yen bank note it will not generally be accepted in exchange for a new hard drive, at least in Canada;
- (ii) a unit of account in exchange. The key here is that while one cannot compare apples and oranges one can compare their monetary prices and add them up. This is, of course, why a System of National Income Accounting is possible;
- (iii) a store of value for future exchange. The key here is stability of value through time. For example, until recently in Zimbabwe inflation was running at 250 million per cent per year. This meant that if you were paid on Friday by Monday your pay check was virtually worthless; and,
- (iv) an income earning asset. The key here is deferred gratification. On the one hand, one can spend money today on goods and services to gain immediate satisfaction or utility. On the other hand, one can save and/or invest to earn interest (the price of money) and then spend a larger sum in future.

Without money, barter is the only non-coercive means of exchange. Barter, however, has very high transaction costs due to the problem of coincidence of interest. If I am a farmer with milk and want bread, I must find a baker with bread who wants milk. If the baker, however, wants carrots then I must find someone with carrots who wants milk then take the carrots to the baker to get bread, if he still has any. In a money economy, however, I simply sell my milk to anyone who wants it and get money which the baker generally accepts.

This assumes, of course, a world of private property. On the far Left of Economics is perfect communism where distribution idealistically occurs ‘each according to one’s needs’.

There is no private property and hence no exchange. Alternatively, on the far Right is the idealistic concept of absolute private property with which not even the State can interfere. In Law this is known as ‘[allodial title](#)’ to property.

(b) Forms

I will now review the five principle forms of money: (i) *Commodity*; (ii) *Convertible*; (iii) *Fiat*; (iv) *Deposit*; and, (v) *Super Money*.

(i) Commodity

The first form of money was a commodity with a high value/weight ratio. Transportation is a major transaction cost. Precious metals, gems, rare or sacred plants or animal products (tobacco and ivory) or labour-intensive items like wampum and the giant stone wheels of Polynesia were early forms of money.

Commodity money, however, is subject to a number of problems and complications. The first is ‘debasement’ or corruption, *e.g.*, lowering the quantity of precious to non-precious metal. Is that bar of gold 24 carat or 18? Second, anything ‘precious’ usually has an attractive alternative use, *e.g.*, as jewellery. Third, no matter its value/weight ratio, any commodity in quantity is bulky and heavy.

The problem of debasement was initially handled through coinage. Thus the first coins bearing the stamp of royal authority guaranteeing its quality are attributed to King Croesus of Lydia (in what is now Turkey) and whose kingdom shortly after innovation of coinage fell to Cyrus the Great of Persia in the 6th century BCE. It was this same King of Kings who freed the Jews from their Babylonian Captivity and allowed them to return to Israel where they finally wrote down the Torah and/or Old Testament of the Christian Bible. Unfortunately, monarchs in financial difficulty often deliberately debased the currency themselves. This was the form of inflation in the ancient and medieval worlds.

(ii) Convertible

The next step in monetary evolution was convertible paper money. Used first in China it was in extensive use in medieval European market towns. Essentially, goldsmiths held large quantities of gold and silver and other valuables in well-protected vaults and safes. A traveller to a market town would rent these facilities to deposit and safely store their valuables while they shopped. The goldsmith would issue a paper receipt redeemable for or ‘convertible’ into these deposits. Soon paper receipts rather than bulky deposits were physically exchanged and paper money was born. And it was the delay between deposit and withdrawal that fostered the birth of the banking system as we know it. This time lag allowed the goldsmith (and later the banker) to loan out deposits earning interest – money making money. As long as they could pay back depositors on demand all was well. The question, of course, was the trustworthiness of the goldsmith and later of deposit-taking institutions such as banks. Trust was not, and is not, always justified.

(iii) Fiat

Eventually another institutional innovation took place. The State assumed responsibility for the convertibility of paper money that it issued. Originally it could be converted into gold or silver – pay bearer on demand. This was the basis of the Gold Standard which backed the American dollar until 1971. Fiat money is simply paper currency issued by the State as a medium of exchange, unit of account, store of value and income earning asset generally accepted as ‘money’ within a given jurisdiction. What backs fiat money is not gold or silver but rather the

expectation of market players about the productive capacity and balance of payments of a country. Paper money (and according to some coins) constitute M1 money or the monetary base.

(iv) Deposit

Fourth, the most important form is deposit money. Most individuals deposit their earnings into deposit-taking institutions like banks. Consumers and firms pay for goods and services by transferring these deposits by cheque or other debit transaction. The institution simply alters the books. No currency actually changes hands. Deposit money is the main means of settling transaction in the modern world.

Again the delay between deposit and withdrawal allows banks to loan out deposits to earn interest – money making money. As long as they can pay back depositors on demand all is well. This raises the question of reserves, *i.e.*, what percentage of deposits should be held to meet withdrawals. Like all retail business banks learn overtime how much inventory (in this case reserves) to retain. By loaning out depositors' monies banks, in effect, create new money.

M1 plus all personal deposits form M2. When non-personal (institutional) deposits are added to M2, we have M3. There is however, **no consensus** on what actually constitutes M1, M2, M3 Mn.

(v) Super

There is, however, yet another form of money - 'super' money. Super money is based on the changing market value of the stock market and other appreciating assets. At a given point in time market valuation of a stock can be used as collateral for a bank loan or line of credit. The next day, the value of the stock may rise or fall but the loan has been made, new money has been created. Similarly some argue credit cards are a form of money because of deferred payment (usual 30 days). In effect, new money is thereby created.

(vi) Liquidity

Liquidity is a fundamental characteristic of money. It refers to the time and cost associated with converting money into goods and services and *vice versa*. Thus as one moves from M1 through M3 and then onwards liquidity becomes less and less. For example I walk into a store with fiat money and it is immediately accepted. If I write a cheque I must provide identification which may or may not be accepted. It can be argued that all assets - financial, physical and intellectual - are forms of money with greater or lesser liquidity. Contemporary monetary theory is in fact awash with controversy about new forms of money including securitization of assets which is arguably the root of the Great Recession.

(c) Demand

(i) Types

There are three demands for money. First, there is a transactional demand for example at the end of the month to pay the bills. Between payment periods there is no transactional demand. Again, this time lag allows banks to loan out deposits and thereby create new money. Second, there is a precautionary demand for money. What if the banks closed and the ATM is down? I need cash for the grocery store! For purposes of the simplified model, however, precautionary is consider a form of transactional demand, *i.e.*, demand for money to meet unanticipated transactions. Third, there is speculative demand for money.

Speculative demand for money (sometimes called asset demand) is an original contribution of Keynes. His so-called Classical predecessors recognized only transactional demand. They believed no rational person would simply hold cash. Rather it would be used to

buy goods & services or invested/saved to yield income as interest. Stuffed in a mattress it does neither.

Keynes, on the other hand, argued that given uncertainties about future interest rates there would be times when individuals would hold on to cash. If you buy a bond today you are committing part of your income to something that will pay a given rate of interest. The price of the bond is called its yield measured by its purchase price and its interest rate say 5%. If tomorrow the interest rate increases to 10% to sell your bond it must yield an effective rate of 10%. The difference between what you paid for the bond and the price at which you must sell it to generate the 10% yield is called a capital loss. For example, while the old bond cost you \$1,000 and generates a 5% return, it must be sold tomorrow for only \$500 to yield 10%.

At very lower rates speculative demand will be very high in anticipation that interest rates must rise tomorrow. If enough individuals and institutions hold cash rather than lend or invest it then a liquidity trap may be created. This is the point at which the demand for money is perfectly elastic with respect to the interest rate. Banks, for example, will not lend because they believe interest rates are so low that they must rise. Accordingly they will not lend to firms for investment purposes or to consumers fearing capital loss.

(ii) Factors

Four factors affect demand for money. The *first* is the price level. The quantity of money measured in current dollars is called the *nominal* money supply. The quantity of nominal dollars demanded is proportional to the price level. If prices go up, the demand for nominal money goes up. What in the end matters, however, is not nominal but *real* money demanded, that is, its purchasing power. Thus if prices go up 10% and income goes up 10%, nominal money has increased but real money stays the same. Thus inflation tends to lower the value of money over time. The higher the rate of inflation, the greater will be the demand for nominal money today.

The *second* is interest rates. Like all commodities, the price of money is an opportunity cost. If its price goes up, consumers and producers will tend to substitute less expensive alternatives. The price of money is the interest rate. The higher the interest rate the more expensive is money and the less will be demanded. Thus an alternative to holding money (the opportunity foregone) is to purchase an interest-earning asset.

The *third* force affecting demand for money is real GDP. In short, the higher is the level of income the greater is the transactional demand for money, *i.e.*, the larger the economy the greater the number of transactions and therefore the greater the transactional demand for money.

Fourth is financial innovation and payment habits. Innovations like interest-earning chequing accounts, ATMs, debit and credit cards all reduce the demand for money. Similarly if you are paid once a year you will hang on to money increasing demand while if you are paid weekly you know there is more coming quickly and you spend or invest.

(iii) The Demand Curve

The **demand curve for money** relates the quantity of money demanded (transactional plus speculative or asset demand) and its price - the interest rate. While transactional demand is relatively inelastic with respect to the interest rate at a given price level and GDP, speculative demand is downward sloping with respect to interest rate, *a.k.a.*, the price of money. The total demand curve is therefore negatively or downward sloping from the left with respect to the interest rate. A shift in the demand curve for money can occur, for example, if real GDP changes, if the aggregate price level rises, if financial innovation takes place or if payment habits change.

(d) Supply of Money

(i) Factors

It is assumed for purposes of the simplified model that the supply of money is determined by the central bank. Even super money cannot escape the control of the central bank. If the wealth effects of a stock market boom are big enough and money is in effect being created, the central bank can raise interest rates and choke off the boom. Similarly during a slump the central bank can lower interest rates and assist recovery. The objectives and tools of the central bank will be considered below.

(ii) Supply Curve

Accordingly the **supply curve** for money is vertical and perfectly inelastic. The curve will shift only on the decision of the central bank.

(e) Market Equilibrium

Money market equilibrium will occur where the vertical supply curve intersects the downward sloping demand curve. **'X' marks the spot** yet again. The connection between monetary policy and the real economy is **the interest rate**. As the interest rate goes up investment goes down shifting the aggregate demand downward to the left. **If the interest rate goes down then investment goes up and the aggregate demand curve shifts up to the right.** By controlling the money supply the central bank can thus increase or decrease the interest rate and thereby affect investment and the real economy.

2. Monetary Policy

(a) Objectives

The primary objective of every central bank is preservation of the value of the currency – internally with respect to domestic inflation and externally with respect to the exchange rate. Secondary objectives include acting as the government's banker and debt manager (particularly internationally), moderating the business cycle as well as fostering economic growth and full employment.

The primary objective goes to the heart of economic expectations. The expected price level is the basis of aggregate expenditure including consumption, investment, government and export/import decisions. Change the expectation and a different outcome will be reached. If prices rise or fall too fast choices must be hastily re-calculated. Uncertainty increases and uncertainty is the great enemy of investment. Rising prices also affect asset values and hence wealth. In a capitalist society or plutocracy wealth is the measure of one's worth. Wealth owners – large and small - have a vested interest in price stability and the value of their assets. The central bank serves their interests.

The logic of control goes like this: by manipulating the money supply the central bank changes interest rates; by changing interest rates the central bank can control investment; by controlling investment the central bank can manipulate aggregate demand; and, thereby, the central bank controls the aggregate price level, *i.e.*, inflation. Similarly, control of interest rates allows the Bank to raise or lower the exchange rate to encourage or discourage foreign investment

This control of interest rates, of course, allows the central bank to achieve some secondary objectives including moderating the business cycle as well as fostering economic growth and full employment.

(b) Tools

The question arises: How does the central bank manipulate the money supply and thereby interest rates and thereby investment and thereby aggregate demand? It uses five principal tools.

(i) Required Reserve Ratio

First, there are reserve ratio requirements. By law or moral suasion chartered banks and other deposit taking institutions may be required to increase or decrease a percentage of their deposits held in reserve in case of a 'run', *i.e.*, many if not all depositors asking for their money back at the same time. If the reserve ratio is 10% then 90% of deposits may be loaned to earn interest and thereby increase the money supply, *i.e.*, banks make money by making money. If the ratio is lowered more loans are made, interest rates fall and investment increases, *etc.* If the ratio is raised loans are called in (so-called demand loans first) and the money supply shrinks, interest rates go up and investment falls, *etc.*

This describes the situation at the retail level which was the subject of post-Great Depression banking reforms. At the wholesale level, however, the shadow banking system is not currently subject to reserve requirements as such. Leverage of some investment banks leading to the Great Recession was in some cases as high as 300:1. In effect reserve requirements act as tax on lending institutions by imposing an opportunity cost measured by interest income foregone on reserves. How reserve requirements may be applied to the wholesale or shadow banking system in the post-Great Recession period remains to be seen.

(ii) Bank Rate and Banker's Deposit Rate

Second, like all businesses deposit taking institutions experience short-run cash flow problems. The central bank acts as "the banker's bank". When an institution borrows from the central bank the rate is the 'bank rate'. As lender the central bank can charge more or less than last time indicating the direction it wishes interest rates to go and thereby add or subtract from reserves of lending institutions.

The central bank also holds deposits by chartered banks and other lending institutions on which it pays interest. Again it can raise or lower that rate signally its policy. The rate paid is "the banker's deposit rate".

(iii) Open Market Operations

Third, there is an array of government securities that can be bought and sold on financial markets as income earning assets, *e.g.*, Treasury Bills and Canada Savings Bonds. By varying their rates, terms and conditions deposit taking institutions are encouraged to buy or sell them thereby increasing or decreasing reserves. The money supply increases or decreases, interest rates move, investment changes, *etc.*

Treasury Bill auctions are a favoured instrument. Usually 90 days in duration they are backed by the sovereign power of the State. Treasury Bills are the safest investment and command no risk premium. The central bank requests bids for a certain amount usually offered to meet the government's short-term cash flow needs. The central bank then decides which bids to accept. If it wants rates to rise it accepts higher bids; to fall, lower bids; if stable, the existing market rate. If rates go up, investment goes down, *etc.* and *vice versa*.

(iv) Government Deposit Shifting

Fourth, the government maintains deposit accounts with the Bank of Canada and other lending institutions. These accounts are managed by the central bank. By shuffling government

accounts it can increase or decrease deposit taking institutions' reserves. The money supply expands or contracts; interest rates fall or rise; investment grows or declines, *etc.*

(v) *Moral Suasion*

Just as animal spirits capture the emotional depths of investment, moral suasion captures the emotive power of the central banker. What and the way a chairman of the Federal Reserve, or Governor of the Banks of Canada or England say or how they raise their eyebrows in public is intensely studied. This is similar to back in the USSR when photos of who stood next to whom on Lenin's tomb during the May Day parade became an academic career, *a.k.a.*, the dark art of Kremlinology.

Kenneth Boulding captured the mystery and magic of the central bank when he wrote in his 1972 article "[Towards a Cultural Economics](#)":

I have argued for years that bankers were a savage tribe who should be studied by the anthropologists rather than by the economists, and I once tried to persuade Margaret Mead to do a book on "Coming of Age in the Federal Reserve," with, I regret to say, no response at all! The culture of bankers, indeed, is more mysterious than that of the Dobuans or the Chuk-Chuks. The Navaho indeed may have a Harvard anthropologist in every family, but the Federal Reserve Board has, to my knowledge, never allowed a single one to attend the ceremonials in its marble hogan. Nobody really knows what bankers are like, what kinds of images of the world they have, what they talk about, what kind of gossip they follow, what taboos they have, and how their decisions are made. The economics of money and banking is almost entirely a matter of the analysis of published statistics and the attempt to find correlations among them. It is pure "black box" analysis with practically no attempt to pry off the lid to see what are the actual processes which produce the often very peculiar outputs.

Arguably, moral suasion is the most efficient tool of the central bank. At the top of the financial food chain, a simple nod or a wink is usually sufficient to elicit an appropriate response from the chartered banks and other financial intermediaries.

(c) Interaction with Fiscal Policy

Before considering monetary policy's application in lowering unemployment or inflation respectively in a recessionary or inflationary gap it is important to note that a central bank may pursue one of two alternative 'target' strategies. The first is a [money supply target](#) that remains fixed while the shifting demand for money curve increases or decreases interest rates. Monetarist policy publicly promises to increase the money supply *only* to match real growth in the economy and thereby avoid price inflation. What happens to investment is left to the market.

The second is an [interest rate target](#) that shifts the vertical inelastic money supply curve to match increases in the demand for money in order to maintain a targeted interest rate. This publicly announced strategy increases investment confidence.

While a secondary objective the central bank can use its powers to increase employment and shift the economy [from a recessionary gap into full employment](#). By increasing the money supply it lowers interest rate. By lowering interest rates it increases investment. By increasing investment it shifts the aggregate demand curve up to the right into full employment equilibrium

between aggregate demand, short-run aggregate supply and potential – the Keynesian Double Cross.

Fighting inflation and maintaining the value of the currency is the primary objective of the central bank. When the economy enters an inflationary gap market forces will eventually raise factor prices and shift the short-run aggregate supply curve up to the left until equilibrium between aggregate demand, short-run aggregate supply and potential is achieved. This will, however, include a significant increase in the aggregate price level, *a.k.a.*, inflation. If, however, the central bank **tightens the money supply** thereby raising interest rates and decreasing investment before factor prices can increase then it can shift the aggregate demand curve down to the left until equilibrium is achieved at a lower price level.

3. The Central Bank

Origins

I will trace the origins of three central banks, the Bank of England, the Federal Reserve in the United States and the Bank of Canada. As will be seen the Bank of England was created to finance defense spending while both the Bank of Canada and Federal Reserve were created in response to financial crises. In both – Canada and the United States - creation of the central bank represented institutional recognition that the financial community could not be trusted to contain its animal spirits and ‘excessive exuberance’ while Government could not be trusted to keep its hands off the printing press. The central bank arguably represents a 4th order of Government - executive, legislative, judiciary and central bank. It marries Government to Finance in a capitalist economy.

The Bank of England

Founded as a private corporation in 1694 the Bank of England was intended to finance defense spending and serve as the Government’s banker and debt-manager. By contrast the Bank of Scotland (also a private corporation) was founded in 1696 to support Scottish business. It was the first bank in Europe to print its own banknotes and continues to do so.

By 1781 the Bank of England had effectively become ‘the banker’s bank’ accepting deposits from and providing services to other banks. In 1844 the *Bank Charter Act* linked banknotes to gold reserves and the Bank of England was granted the sole right to issue banknotes in England & Wales. An exception was made, however, for private banks that previously enjoyed that right. The last private banknotes in England were issued in 1921. Nonetheless, certain Scottish and Irish (Ulster) private banks still retain this right. It should be noted that their banknotes are not technically legal tender but rather promissory notes like cheques.

In 1870 the Bank of England was given the additional responsibility for interest rate policy. Then in 1890, during a severe financial crisis, centred on the Baring Bros Bank, the Bank of England became ‘lender of last resort’ in order to stabilize the financial system during such financial crises.

From its foundation in 1694 until 1946 the Bank of England was privately owned and operated. Under the post-war Atlee Labour government, however, it was nationalized and until 1997 was state-controlled. In 1997 under the Blair Labour government the Bank of England again became a privately held corporation and was granted operational independence over monetary policy in the United Kingdom.

The Federal Reserve of the United States

The first Bank of the United States was created in 1791 by an act of Congress to serve, like the Bank of England, as the Government's banker and debt-manager. Like the Bank of England it was a private corporation. Unlike the British, however, it was intended to be a truly national bank. In 1811 its charter lapsed and Congress, for regional political reasons, failed to renew it.

In 1816, the second Bank of the United States was created primarily in response to government debts incurred during the War of 1812. Its charter was for 20 years but in 1833, again for political reasons, President Jackson issued an executive order ending deposit of federal funds which instead were placed in state chartered banks. After its charter expired in 1836 it became a purely private bank and then went bankrupt in 1841.

A series of financial crises racked the United States in the mid- to late 1800s climaxing with the 1907 Panic known as the Banker's Panic. It led to runs on all banks and the entire financial system appeared near collapse. A white knight appeared, however, in the guise of financier J. P. Morgan, one of the richest men in America. Organizing other New York bankers and industrialists like John D. Rockefeller – the richest man in America - Morgan pledged enormous sums of his own money to stabilize the financial system.

While many in industry and government praised Morgan for his initiative many were gravely concerned that the fate of the nation's finances rested on self-interested private charity. Accordingly in 1908 Senator Nelson W. Aldrich established and chaired a commission to investigate and propose solutions. This led to creation of the Federal Reserve System in 1913.

Unlike the Bank of England and the Bank of Canada the Federal Reserve is regional as well as national in character. There are 12 district federal reserve banks in Atlanta, Boston, Chicago, Cleveland, Dallas, Kansas City, Minneapolis, New York, Philadelphia, Richmond, San Francisco and St. Louis. The regional character of the system allows variations in monetary policy deemed appropriate for the differing economic conditions in the various regions.

In addition to the 12 regional Federal Reserve Banks with their own managements, there is a seven member national Board of Governors appointed by the President and confirmed by the Senate to serve 14-year terms of office.

Significantly, unlike the British and Canadian systems, there is no branch banking in the United States. Rather local branches retain reserves in their own vaults. Under branch banking reserves are generally held at head office. The regional nature of the American experience began as fear by the slave-owning South of the emancipationist industrializing North. The U.S. simply could not accommodate a truly national bank or a branch banking system. Failure of the first and second Banks of the United States as well as the constitution of the Federal Reserve speak to, among other things, this regional opposition to national financial centralization.

The Bank of Canada

During the pre-Confederation period the provinces of British North America issued, from time to time, treasury notes that served as legal tender, *e.g.*, Prince Edward Island in 1790 to make up for a coin shortage, a common problem among the provinces. Various private banks also issued banknotes beginning with the Montreal Bank (later the Bank of Montreal) in 1817.

Under the *British North America Act*, the federal government gained jurisdiction over currency and banking and the *Dominion Notes Act* came into effect in 1868. The new federal government assumed responsibility for provincial notes. In 1871 the *Bank Act* repealed all

provincial acts conflicting with federal jurisdiction over currency and banking. Thereby chartered banks came under common regulation. The private banks were allowed to issue notes with a minimum denomination initially of \$4. The federal government issued smaller notes as well as larger ones used mainly for transactions between banks.

Until the Great Depression of the 1930s there was little need for central banking in a widely scattered and mainly rural economy. With the Depression, various bank scandals and a Conservative Prime Minister's perceived need for a direct means for settling international accounts, R.B. Bennett set up a royal commission to study "the organisation and working of our entire banking and monetary system [and] to consider the arguments for or against a central banking institution..."

The result was the *Bank of Canada Act* of 1934. The Bank of Canada began operations in March 1935. It initially was a private corporation with shares sold to the public. The new Liberal government of William Lyons McKenzie King, however, amended the Act and nationalized the institution in 1938. The Bank became publicly owned and remains so today.

The Bank of Canada Act, which defines the Bank's functions, has been amended many times since 1934. But the preamble to the Act has not changed. The Bank still exists "to regulate credit and currency in the best interests of the economic life of the nation."

About the Bank, Who We Are,
<http://www.bankofcanada.ca/en/about/history.html>

Conflicting definition of the "best interests of the economic life of *the nation*" between region and metropole played a conspicuous role in the pre-history and constitution of the Federal Reserve Board in the United States. It did and does so still in Canada. The American way is regionalism and local reserves for local investment. Canada, however, chose branch banking in the British tradition. And, unlike the Federal Reserve, the Bank of Canada does not practice regional monetary policy.

The apocryphal "7-to-1" policy of chartered banks in Canada demonstrates its regional animal spirits. For seven dollars in deposits in the regions, one dollar is lent back to local enterprise. In the metropole – Montreal & Toronto – for every dollar deposited seven are lent back to where the opportunities are and the head office with the reserves.

Historic, rather than apocryphal, is the constitutional crisis of 1961 between Governor of the Bank of Canada James Coyne and Conservative Prime Minister John D. Diefenbaker, Member of Parliament for Prince Albert, Saskatchewan - formerly 'the northwest territories' of Canada until 1905, *a.k.a.*, the regions. Known as the 'Coyne Affair' the Governor publicly criticized the Prime Minister's expansionist (Keynesian) economic policies especially export sales to the United States during a recession and recommended instead higher interest rates to slow the economy down and eliminate the deficit (Classical).

Behind the national scene, however, were the regional political economic implications of the Governor's view. Diefenbaker in 1957 created the Agricultural and Rural Development Agency (ARDA) so that federal dollars could help develop the regions outside southern Ontario and Quebec, the metropole. There lived the majority of the population and dollars but not seats in the House of Commons. Diefenbaker's Conservatives held the regions while his Liberal opposition held the metropole.

The Conservative House of Commons voted to vacate Coyne's employment but the Liberal dominated Senate refused to pass the bill. Constitutional crisis! Coyne nonetheless resigned. This raises, however, the whole question of the arm's length relationship. At that time the Bank of Canada was at full arm's length from government interference. Once appointed the Governor was essentially independent of the Government of the day. Similarly, the Chairman of the Federal Reserve and European Bank are shielded from political interference. They function at full arm's length. A recent case in Italy where the Governor of the Bank of Italy was accused of interfering with a foreign takeover of an Italian private bank demonstrates. He refused to resign for over five months and only then, I believe, on his terms. As in the Coyne affair, any political interference causes the animal spirits of investors, especially foreign ones, to be depressed. As will be seen, moral suasion is arguably the most powerful tool in the hands of a modern central bank.

Today, after amendment of the *Bank of Canada Act*, the Minister of Finance can order policy changes. Any minister who does so, however, faces the opprobrium of the investment community with all its economic and political implications.

4. Shadow Banking

After the Great Depression of the 1930s tight central banking regulation became the norm at the retail level in the United States, the dominant player and trend setter in banking and financial markets around the world. Among other things the federal government in effect guaranteed retail banking deposits. At the wholesale or investment banking level, however, regulation flowed from security & exchange rather than banking legislation.

In the 1980s deregulation became the policy norm and two major things happened. First, retail banks were allowed to invest their own money, *a.k.a.*, deposits, in 'secure' financial securities rather than simply making loans or issuing mortgages. In effect, many became investment banks. Second, financial innovations at the wholesale level rapidly accelerated, among other things, spawning the so-called 'Masters of the Universe', a term coined in the 1980s to describe Wall Street brokers in that Age of Greed. Through conglomeration, de-regulation, financial innovation and lax public oversight a 'shadow banking system' arose beyond the pale of public scrutiny and arguably beyond accountability becoming, in some cases, 'too big to fail'.

Ironically, the most recent investment bubble of 2007-8 is rooted in 'securitization' intended to spread and minimize risk. According to John R. Commons in his classic *Legal Foundations of Capitalism* (1924) property, in the economic sense of what can be bought and sold, is the history of its ever increasing intangibility. In this sense, property has become not so much a thing in-and-of-itself but rather an evolving set of rights & obligations associated with it, *e.g.*, a warranty. Thus property today includes intangibles like copyrights on artistic & literary works, patents on inventions, futures options, equity shares, software and investment certificates in land and buildings, *e.g.*, 'CDOs' or Collateralized Debt Obligations.

CDOs are part of a more general and widespread securitization of property. This is done using probability calculations derived from physics and mathematics rather than traditional actuarial calculations. In fact major firms hired high energy particle physicists and mathematicians right out of school to do the calculations. Title is created, as a financial instrument, to a mix of thousands of primary financial instruments such as copyrights, mortgages, patents and even student loans. The mix is 'hedged' (one primary asset against another so to speak) to assure a mathematically stable rate of return with zero to minimal

downside risk. Slices or shares in this consolidated ‘exotic’ (now ‘toxic’) instrument are then offered to investors. Title is granted to a share of the resulting pool.

It is no longer clear, however, what is in any given instrument, *e.g.*, how much sub-prime, prime or super-prime. Their complexity is such that they are not traded to the general public and therefore not subject to retail security & exchange or banking oversight. Essentially they are sold wholesale between banks, hedge funds and investment houses, *intra alia*. What is being bought and sold is new exotic and very complicated financial instrument. Their complexity is such that very few understand the math including CEOs of financial institutions buying and selling them. But they have ‘the numbers’. Bond and other rating agencies agreed and initially granted ‘AAA’ ratings to many such securitized financial instruments.

In this regard it is critical to note that physics rests on the Laws of Nature while financial investment rests on ever changing human laws and human nature subject to fear and greed. This distinction extends to the application of mathematics. As economist [Kenneth Boulding](#) points out there are “limitations [to] mathematics both as a tool and as a language, especially in regard to possible distortions of the growth of knowledge”.

In this regard, the Great Recession of 2008 arguably resulted because of a failure to distinguish between risk and ignorance and between speculation and enterprise. These are the subjects of [Chapter 12 – The State of Long-Term Expectations](#) of Keynes’ *General Theory* of 1936.

(a) Risk vs. Ignorance

Risk involves calculation of the probability of possible outcomes. It implies one knows what those outcomes might be. Usually it also involves setting aside ‘Black Swans’, or outliers of extremely low probability but potentially devastating consequences. With respect to the Great Recession, this was arguably the case with respect to the chance that the entire national housing market in the United States would collapse at the same time. – an extremely low probability but one with devastating consequences.

Ignorance, on the other hand, defined as the lack of knowledge, cannot be subjected to calculation. One just does not know. As Keynes points out in Chapter 12, business enterprise inevitably suffers ignorance beyond a very short time frame. It is animal spirits that keep them going concerns, not probabilistic calculation.

(b) Speculation vs. Enterprise

In economics, speculation involves taking risks. And this can be a very good thing, *e.g.*, insurance, future options, *etc.* It can also be a form of gambling in which short-term trumps long-term returns. In Chapter 12, Keynes compares playing the stock market – day trading - as a beauty contest in which it is not choosing the most beautiful but rather the choosing the one that conventional expectations will choose. This catches the ‘herd mentality’ of equity markets.

Keynes applies “the term speculation for the activity of forecasting the psychology of the market, and the term enterprise for the activity of forecasting the prospective yield of assets over their whole life” (Keynes 1936, 158). Arguably, bank deregulation beginning in the 1980s resulted in the merging of the banking and security & exchange systems. Banks traditionally focused on enterprise loaning money (deposits) and retaining ownership of primary financial assets, *e.g.*, the mortgage on a home. With deregulation they began to engage in speculation by selling off primary assets and acquiring secondary or derivative assets, *e.g.*, CODs. With both the banking and security & exchange systems engaged in speculation a financial bubble was arguably inevitable.

Alternative Policy Paradigms

The Keynesian model was the first true macroeconomic model. Its analytic tools, however, such as aggregate demand and supply, the multiplier, *etc.*, have been taken up even by its critics. In this sense at least all are Keynesians. In essence they take the model and change selected assumptions to generate different outcome. There are four major alternatives which will now be very briefly reviewed. These are the Classical, Monetarist, Rational Expectations and Supply Side.

Classical

The Classical school of thought pre-dates Keynes. It was, however, Keynes himself who defined the model in order to demonstrate how he differed. With respect to demand the Classical school had only the aggregate demand curve, *i.e.*, there was no aggregate expenditure model because the iron law of wages insured the economy would exit any depression. Aggregate demand was essentially the same.

It is with respect to short-run aggregate supply that the difference is most apparent as well as the demand for money. In essence the Classical school believed the short-run aggregate supply curve was vertical or perfectly inelastic. In effect, short-run and long-run aggregate supply were the same. This was because there were no sticky money wages. Changes in prices were immediately recognized by labour. This meant that as prices went up money wages would immediately respond to maintain the real wage of workers. With a vertical aggregate supply any increase in demand due to increased government spending would result in no increase in output only increased prices. Accordingly government could not use fiscal policy to manage the economy.

With respect to the demand for money the Classical school believed there could be no hoarding of cash for speculative reasons. People would either spend or save money as an income earning asset. Savings would always equal investment. Accordingly a liquidity trap was impossible. Changes in the money supply would simply result in changes in nominal prices not real output. In essence nominal factors played no role, only real ones involving factors of production and technology. Keynes while recognizing that monetary policy could be frustrated nonetheless saw it as having some effect on the real economy.

Monetarists

Keynes assumed that wealth could be held either as cash or bonds, *i.e.*, interest earning financial assets. The key for Keynes in determining how much would be held as cash and how much as bonds was the interest rate. It was this conclusion with which the Monetarists contested.

The Monetarist (specifically Milton Friedman and his disciples) accepted Keynes' assumption that wealth could be held either as cash or income earning assets. However, they did not accept that it could be held only as bonds. Rather they believed that there were additional forms of wealth including stocks that earned dividends and capital gains as well as physical assets like real estate and works of art that could appreciate in value.

According any increase in the interest rate on bonds would be offset by compensatory decreases in one or both of the other rates of return and *vice versa*. For example, when the price of stock equity went up, the price of bonds would tend to go down. This would keep the demand for money stable.

With respect to fiscal policy, for the Monetarists if government increases spending without raising taxes, it must finance the deficit either by printing money or borrowing on financial markets. In effect government borrowing will raise the interest rate crowding out private investment thereby minimizing the impact of increased spending on output. Accordingly deficit financing to stimulate the economy will fail.

With respect to monetary policy, Monetarists believe that instability in output (the business cycle) results not from the animal spirits of the investment community but rather from instability in the growth of the money supply. Accordingly the best thing that the monetary authorities can do is to increase the money supply at a relatively steady rate, *i.e.*, by a rule rather than at the discretion of policymakers. A stable increase in the money supply will mitigate inflationary pressure without introducing additional instability.

The long and short of it is that the Monetarists calls for limited changes in fiscal policy because it only crowds out private investment and a steady rate of increase in the money supply to stabilize rather than enhance economic growth. In other words, like the Classical school, the Monetarists calls for minimum government intervention in the economy.

Rational Expectations

The New Classical or Rational Expectations school of thought does not accept the Keynesian and Monetarist assumption about labour's backward looking expectations about price inflation. Rather it assumes forward looking or rational expectations, *i.e.*, there will be no systematic error in expectations. Expectations are assumed to be made by all economic agents based on all available information concerning any variable. Thus workers will use such information intelligently and understand how changes in the variable being predicted will affect other variables. This means the aggregate supply curve is nearly vertical and any increase in government spending will generate only increases in prices, not output. In fact the only way a change in fiscal or monetary policy can have effect is if it is a surprise.

This model, however, has an even more far reaching policy implication. Specifically any change in government policy – economic or otherwise – will result in private sector agents gaming the system. Examples such as the R&D tax credit program introduced by the Trudeau government in the 1970s and President Johnson's Urban Homesteading program during his 1960s appear to confirm this cynical public policy view.

Supply-Side

During the Reagan Administration in the 1980s a new model arose called supply-side economics. It is based on the assumption that firms treat taxes as a cost of doing business and factor them into their supply curve. Accordingly if taxes are cut the cost of production decreases and output increases. This has been called Voodoo Economics by the mainstream because, among other things, once taxes are reduced to zero there is no more policy. Given the increasing competition between jurisdictions, national and regional, for industrial location it can be argued that in fact corporate taxes are already almost zero.

Arguably the George W. Bush Administration during the 'noughties' has taken this even further with what I call Zombie Economics. While pretending to be fiscal conservatives the Administration cranked up the federal deficit to unheard of levels through its tax cuts to the wealthy while waging two wars abroad. The hidden agenda, however, was in effect to bankrupt the federal government and force massive cuts in the size of the U.S. government. It remains to be seen if they will eventually succeed.

Finally, I cannot resist quoting from the last paragraph of the *General Theory*:

At the present moment people are unusually expectant of a more fundamental diagnosis; more particularly ready to receive it; eager to try it out, if it should be even plausible. But apart from this contemporary mood, the ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist. Madmen in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back. I am sure that the power of vested interests is vastly exaggerated compared with the gradual encroachment of ideas. Not, indeed, immediately, but after a certain interval; for in the field of economic and political philosophy there are not many who are influenced by new theories after they are twenty-five or thirty years of age, so that the ideas which civil servants and politicians and even agitators apply to current events are not likely to be the newest. But, soon or late, it is ideas, not vested interests, which are dangerous for good or evil.