GOLD STANDARD UNIVERSITY

Winter Semester, 2004

Monetary Economics 102: Gold and Interest

Lecture 6

THE HEXAGONAL MODEL OF CAPITAL MARKETS

¶ Enter: the Investment Banker ¶ The Bond Market and the Rate of Interest ¶ The Gold Bond and Its Sinking Fund ¶ The Euthanasia of the Bondholder ¶ The Rise and Fall of the Yield-Curve ¶ Arbitrage *versus* Speculation ¶ One Rate or Two? ¶ Deterioration in the Quality of Credit ¶ Fleecing the Producers

Enter: the Investment Banker

We have arrived at the final stage, what I figuratively call the "hexagonal model of capital markets" with its six participants: the annuitand, the annuitant, the entrepreneur, the inventor, the capitalist and, the last protagonist of the drama of human action, the *investment banker*. His entry was made necessary by the marginal annuitand and the marginal annuitant. The former is the one who has just missed his chance to form a partnership with the inventor, and the latter his, with the entrepreneur. Without the

services of the investment banker the resources represented by the savings of the marginal annuitand and the marginal annuitant would be lost to society.

If the two formed a partnership whereby the former provided income for the latter, it would be net short of future wealth while net long of present wealth. It would take the skills of a specialist to nurture present wealth into future wealth of undiminished value. This specialist was the investment banker. He would invest the wealth of the annuitant in such a way that its value would grow and it could in due course be exchanged for income to pay an annuity to the annuitand. Under the gold standard the investment banker would buy gold bonds, the safest paper available for the preservation of wealth.

The Bond Market and the Rate of Interest

The hexagonal model of the capital market at last provides a sufficiently broad basis upon which the formation of the rate of interest can be explained. Since no two annuities and no two mortgages are similar, trading them without a common denominator would be virtually impossible and, as a consequence, the rate of interest would be highly volatile. *A regime of stable interest rates is not possible without the services of the investment banker, nor without a common denominator, the gold bond, to facilitate the trading of annuities and mortgages.*

As we shall see in the next Lecture entitled *The Bond Equation and the Rate of Interest*, the price of the gold bond is just the mirror image of the rate of interest. Although the two move in opposite directions, either one determines the other uniquely. For this reason we may define the rate of interest in terms of the price of the gold bond. Thus bond trading appears as the very market process responsible for the formation of the rate of interest. There is no market quoting the rate of interest directly. In order to find out what the going rate of interest is one must go to the bond market, get a quotation for the bond price, and calculate the rate of interest from there. In dealing with the bond market we must not forget that it is the epitome of a far larger and far more pervasive capital market encompassing all conceivable exchanges of wealth and income. Every such exchange, not just the purchase or sale of gold bonds, has an effect on the formation of the rate of interest.

The investment banker's function is clearing and brokering. He matches the various and varied demands thrown upon the capital market from its five corners. He must be prepared to enter into partnership with the annuitand, the annuitant, the entrepreneur, the inventor, and the capitalist, as the need may arise, through his specialized instruments of mortgage and annuity contracts. At the end of the day he balances the net liability or asset resulting from this activity through the purchase or sale of his standardized instrument, the gold bond. In effect, the investment banker is doing arbitrage between the bond

market and the other five corners of the capital market. The result is the emergence of a *stable* rate of interest.

The hexagonal model of the capital market brings about a great increase in scope for the most successful combination of capitalist production: the troika of the entrepreneur, the inventor, and the capitalist, already mentioned in the previous Lecture. From now on they can form their partnership even if unbeknownst to one another. The inventor need not waste time in seeking out a congenial entrepreneur, nor do the two of them in finding a suitable capitalist. If the invention is good and the enterprise sound, then they could start production on the most favorable terms immediately through the good offices of the match-maker, the investment banker. He will line up a capitalist to make the troika complete. Nor does the capitalist have to remain wedded to the same inventor and entrepreneur for the entire duration of the project. Through buying and selling gold bonds he can always go after the project that appears most promising to him. The problem of forming optimal triangles midstream can be safely entrusted to the bond market.

The Gold Bond and Its Sinking Fund

We have seen that the success of the capital market depends on a versatile and standardized trading instrument, the gold bond, that can be used as (1) the standard of capital values, (2) the balancing item of a liability on capital account. The gold bond evidences debt payable at maturity in gold, plus it provides an interest income in the interim, also payable in gold. The income is represented by the coupons attached. The gold bond is traded in a broadly-based secondary market.

It is absolutely necessary that principal and interest be payable in gold coin. A bond that is payable at maturity in irredeemable currency is not a financial instrument; it is a cruel joke. It means that the underlying indebtedness will never be extinguished. It will keep growing forever, and the danger is that its growth will ultimately accelerate and get out of control. The bond in fact is irredeemable: at maturity it will be replaced by another irredeemable bond, usually of inferior quality. One should not be misled by appearances that the face value of the bond is paid at maturity in irredeemable currency. That type of currency is inferior even to the irredeemable bond in that it does not have a yield. In today's world all bonds are irredeemable. Gold bonds have disappeared without a trace after Great Britain and the United States reneged on the last issues in the early 1930's. One should keep in mind that this does not mean that there is no demand for them. It only means that the powers-that-be would like to extirpate the memory of the gold bond in order "to make the world safe for plunder". We still don't know whether the attempt has succeeded or whether, perhaps, truth and justice will ultimately prevail, as it always has in history so far.

A gold bond is supported by a *sinking fund*. It is established by the issuer in order to make sure that the market value of the bond does not erode with time, as it might, making the rate of interest take a "slide" on the yield curve, a concept I shall discuss in a moment. It is incumbent on the issuer to keep the value of the bond stable, if need be, by retiring some of the outstanding issue prematurely. The manager of the sinking fund is a market-maker who would buy the bond at the lower bid price and sell it at the higher asked price. It follows that, under a gold standard, the sinking fund would not only protect the bondholder, but it would also be profitable to operate for the issuer.

A book on sinking funds published in 1967 (*op.cit.*) suggested that their operation incurred extra costs that bondholders had to absorb in the form of lower coupon rate. The drift of the argument was that the issuers of debt were actually doing a favor to the bondholders in issuing it *without* sinking fund protection, a practice coming into vogue just about at that time. Of course, the suggestion that the bondholder may be better off without the protection of the sinking fund is disingenuous. The book was written to prepare the public for dramatic changes. Gyrating interest rates and bond prices were about to replace stable interest rates and stable bond prices, due to the coming destruction of the gold standard that has cast its long shadow forward. In such an environment the sinking fund would be exhausted in a matter of a few weeks, if not days. New arguments had to be invented to justify new practices. The book was paving the way to the euthanasia of the bondholder that was about to take place.

The Euthanasia of the Bondholder

The cynical phrase "euthanasia of the boldholder" was first used by John Maynard Keynes. He was well aware what the implementation of his schemes to sabotage the gold standard would mean to bondholder. Keynes treated the bondholder with contempt, as a parasitic element of society. He ridiculed coupon-clipping, calling it the only positive contribution the bondholder is capable of making to the commonweal.

In the event, euthanasia was turned into a bloodbath, the like of which the world has not seen since the night of St. Bartholomew. In view of the hexagonal model, to disparage the bondholder is tantamount to disparaging the annuitand and the annuitant, that is, one's father and grandfather who, after a lifetime of faithful and diligent service expect to have a peaceful and secure retirement. The euthanasia of the bondholder means the euthanasia of dear old grandfather.

It is to the eternal shame of our Western Civilization that the crime of slaughtering the bondholders was permitted and even glorified, and no case study of the sufferings of the victims was ever allowed to be published.

The euthanasia of the bondholder was the ill star under which "social security" was born. The latter is a compulsory scheme based on socialistic principles. There is no actuarially sound way to fund the liability incurred by a universal social security program. In fact, it is an unfunded system financed through an open-ended tax escalator. Such a system is easy to introduce, as in the early days a relatively large number of workers support a relatively small number of eligible beneficiaries and the tax rate is nearly negligible. However, as the system reaches maturity a couple of generations later, the number of workers it will take to support one beneficiary declines drastically. This would happen in any case, but birth control, life-prolonging drugs and therapeutic procedures greatly accelerate the process. A reduction in promised benefits is out of the question and is regarded as political dynamite. The only alternative is to escalate taxes that finance the system. Just how long the taxpayers will be willing to carry the open-ended increases of burden is anybody's guess. It will eventually dawn upon young people that they will never benefit as the scheme is bound to collapse before they reach retirement age.

Compulsion can never do what spontaneous association can. We have seen in the previous Lecture that the "social security" scheme introduced in the 1930's dissipates the wealth of the annuitant and induces the annuitand to stop saving. There is also the sinister problem of depriving the inventor of his traditional source of financing, with incalculable consequences as to capital accumulation, in particular the capitalization of incomes, which society depends upon in order to provide the benefits and comfort to the retired population. Note that none of the problems associated with the compulsory scheme arise under the voluntary cooperation of the annuitand, the annuitant, the entrepreneur, and the inventor discussed in the previous Lecture.

The usual objection is that the voluntary system is not universal and it leaves indigent people out in the cold. This is not the place to go into a discussion of the validity of the Biblical admonition that "the poor will always be with us" and there will always be a need for charity, regardless of the level of affluence that society may reach. We must reconcile ourselves to the objective fact that a compulsory social security scheme promising universal coverage is not viable and cannot be made viable. The idea could be sold politically only because people are prone to fall for Ponzi schemes, to the genus of which social security clearly belongs.

The Rise and Fall of the Yield Curve

Nowadays one hears frequent references to the "yield curve" or, as the case may be, to the "inverted yield curve". It may come as a surprise that there was no yield curve under a gold standard. Multiple interest rates along with multiple foreign exchange rates belong to the paraphernalia of the regime of irredeemable currency, wherein a change in the price of crude oil, for example, could move both rates, and an increase in prices could provoke another increase in prices, as currency debasement looms large. Under the gold

standard the rate of interest and of foreign exchange are stable and well-protected from shocks such as that in the price of crude oil, for example.

The yield curve represents the rate of interest as a function of time to maturity. It is considered "normal behavior" for the rate of interest to increase as the time to maturity is increased. Moreover, the rate of interest asymptotically approaches a certain value, the theoretical yield of a perpetual bond, as the time to maturity tends to infinity. This means that the normal shape of the yield curve is that of a rising one which nevertheless is bounded from above by the theoretical yield on perpetual bonds. A rising yield curve means that as maturity increases, the yield also increases. This is supported by the Principle of Time Preference (a concept that I shall discuss in a future course Monetary Economics 202, *The Bond Market and the Formation of the Rate of Interest*) asserting that, when given the choice between funds available in the remote or nearby future, the economizing individual will, other things being the same, choose the latter.

However, under "abnormal" credit conditions it can and often does happen that, as maturity increases, the yield actually *decreases*. In this case the yield curve is called "inverted" as it is falling (apart from a brief sharp spike near zero maturity). It still approaches the same value asymptotically as the time to maturity tends to infinity, but in this case the yield curve is bounded from below by the theoretical yield on perpetual bonds. Abnormal credit conditions mean that, as a result of loose credit policies pursued by the banks and the government, too many short-term credit instruments approach maturity, which depresses their prices. Cash is scarce and the yield on short-term credit is high. The inverted yield curve may return to its normal state quickly, or it may last for an extended period of time, depending on the depth of the credit crisis which always accompanies it.

None of this may happen under a gold standard where the government and the banks are forced to keep their short-term liabilities safely within the limits of their quick assets. In fact, if all the gold bonds issued have sinking fund protection, as they should, then there is no yield curve. More precisely, the yield is the same constant value for all maturities (making the yield curve a horizontal straight line). The rate of interest is stable, both in time and across the maturity spectrum. A yield curve, if one existed, would create a temptation for the banks to borrow short in order to lend long. Such an activity would lead to periodic credit crises and the yield curve would get inverted as a result. I shall deal with these problems in more details later in this Course.

The fact that there is no yield curve under a gold standard does not mean that the rate of interest may not change. What it means is that all the adjustments are so gradual that they present no temptation for the banks to speculate in the bond market. On the other hand, if certain economic shocks (such as a continental crop failure, or pestilence wiping out a sizeable portion of the working force) calls for a big rise in the rate of interest, then it will be made quickly and expeditiously. Issuers of gold bonds will refund their obligation and sell a new issue with a higher coupon rate. In no case would they allow bondholders to suffer a loss. They take to heart the Biblical admonition that "tormenting widows and orphans is a sin that cries to high heavens for punishment".

Arbitrage *versus* Speculation

I have mentioned repeatedly that there is no bond speculation under a gold standard. Subsequently I got several messages from my readers insisting that speculation actually has a role in stabilizing interest rates. However, what my readers referred to as "stabilizing speculation" is no speculation at all. It is arbitrage. The two must be carefully distinguished, something that mainstream economics has failed to do. The distinction becomes clear at once when we consider the objectives of the speculator and the arbitrageur. The former is willing to take big risks in the hope of a big payoff. The latter is not interested in risk-taking at all. The arbitrageur steps in whenever the market shows deviant behavior. He makes his bet that the deviation will be corrected. Whenever a sufficient number of arbitrageurs do likewise, their market action will be self-fulfilling. Examples are deviations in the foreign exchange rates, or those in the rate of interest, under a gold standard. The arbitrageur takes it for granted that the deeds of the government are as good as its words, and it wouldn't knowingly mislead the market and pocket the illicit gains that originated in deception. Of course, any arbitrageur would quickly come to grief in today's foreign exchange and bond markets where deception is practiced by governments on a regular basis. It is not by accident that mainstream economists have failed to make a distinction between arbitrage and speculation in the bond market. They are lame apologists for the government out to cover up bad faith and chicanery.

Arbitrageurs have vacated the field, and speculators have taken over, as a result of the destruction of the gold standard. Contrary to mythology, under the gold standard it wasn't the central bank that kept the rate of interest and foreign exchanges stable. It was the arbitrageurs who believed in the good faith of the government in promising payment on their obligations in gold coin at a fixed rate. Without arbitrage the financial resources of the central bank would have been inadequate to stabilize the foreign exchanges, as well as the rate of interest. As I have said this is an issue that mainstream economics is unable to address. It has no mandate from its sponsors to use the language of good and bad faith in market dealings. However, there is no other way to deal with markets under the regime of irredeemable currency but through pointing out the deception regularly practiced by the government and its central bank in order to fool the public. This is why devaluations were always announced during the week-end when markets were closed. Prior to this government and central bank spokesmen had shouted from the rooftop that foreign exchange rates will "never" be changed. Next week politicians and central bankers had to eat their words. Nowadays this problem is avoided through the mechanism of floating foreign exchange rates. Note that "floating" is a euphemism for "sinking", as the international monetary system is merely a cover for competitive currency devaluations. At any rate, the outcome is the same: the fleecing of the producing sector (including the savers) and the enriching of the financial sector (including the treasury).

One Rate or Two?

I have pointed out that the rate of interest is the marginal efficiency of the exchange of wealth and income. It is determined through a market process, similar to that determining the price of wheat. But whereas the formation of the wheat price can be described through a simple diagonal model with the two poles representing supply and demand, the formation of the rate of interest is more complicated as there are at least two types of exchanges involved. Following this line of reasoning we have arrived at the hexagonal model of capital markets clearing all the exchanges of income and wealth. Just as the sale of every sack of wheat has an effect on the price of wheat, every exchange of wealth and income has an effect on the rate of interest.

My critics point out that if my analysis were correct, then there would have to be two rates of interest, one regulating the exchange of the income of the annuitand for the wealth of the inventor, and another, regulating the exchange of the wealth of the annuitant for the income of the entrepreneur. One rate or two, that is the question.

It is true that for gold bonds, no less than for wheat, the market quotes not one but two prices: a higher asked price and a lower bid price. Transactions take place between these two extremes. The spread between the two has an extraordinary theoretical importance. It is instrumental in setting a limit to the volatility of the rate of interest. In more detail, the higher asked price for the gold bond translates into the floor, and the lower bid price into the ceiling, for the rate of interest.

The reason for the inversion is the fact that the price of the gold bond and the rate of interest move inversely. It is imperative that the reader have a good grasp and a good visual image of this inverse movement, and the inversion of its extremities. (One way of visualizing this inverse movement is a pair of pistons of a reciprocating steam engine as they run up and down in their respective cylinders, always in opposite directions. Another way is the see-saw, a piece of equipment for children to play on, consisting of a long flat piece of wood supported in the middle. A child sits at each end and makes the see-saw move up and down.) I shall make frequent references to the reciprocating movements of the rate of interest and the price of the gold bond, by calling it the "see-saw".

Stable interest rates under a gold standard are explained by the small spread between the asked and bid price of the gold bond. We may verbalize this by saying that the stability of the rate of interest under a gold standard is the flip-side of the narrow bid/asked spread for the gold bond. By contrast, wildly gyrating interest rates, as experienced under the regime of irredeemable currency, reflect the yawning gap between the asked and bid prices of bonds. The gap is the only clue we have to explain unstable credit conditions.

So why is there a unique rate of interest under a gold standard when, on the face of it, there ought to be two, one at which income is exchanged for wealth, and another at which wealth is exchanged for income? Here is the reason why. Those who want to exchange wealth for income are the buyers, and those who want to exchange income for wealth are the sellers of the gold bond. To say that the two rates, one involved in exchanging wealth for income and the other income for wealth, are not equal is the same as to say that there is a wide gap between the asked and bid prices of the bond. The investment banker and the managers of various sinking funds act as market-makers in the bond market. They buy the gold bond at the lower bid price and sell it at the higher asked price. They profit from the existence of a wide spread between the two. As a result of their arbitrage the spread narrows and the two rates get closer. Even though profits from this arbitrage disappear together with the spread, the investment banker and managers of the sinking funds will continue in this business. Their primary task is not to profit from the arbitrage; it is to make a market in bonds. We conclude that under a gold standard the bid/asked spread of gold bonds is negligible, and for all practical purposes the rate of interest is one and the same for all maturities.

Deterioration in the Quality of Credit

If the bid/asked spread for bonds widens, it means that the market-makers in the bond market are hampered in their bid/asked arbitrage. Either the sinking fund protection of bonds is being withdrawn, or the investment banker is intimidated by a torrent of new inferior bond issues. The widening in the bid/asked spread measures the deterioration of credit.

In these terms, the 20th century witnessed an unprecedented deterioration in the quality of credit, one that mainstream economists prefer to ignore. The landmark was the government's default on its gold obligations. This was followed by the dismantling of the sinking fund protection of the bondholders. Finally, the gold clause on bonds were declared "contrary to public purpose" by the government. As a consequence arbitrageurs have abandoned the field and speculators have taken over. The latter are now in the driver's seat, and bond speculation is increasing by leaps and bounds.

In the 19th century self-respecting governments and companies would not have tolerated that the value of their obligations become a plaything in the hands of speculators. As a matter of fact, there were no bond speculators since there was not enough volatility in the price of the gold bond to make speculation profitable. Things are very different today. Ever since the last link between the dollar and gold was severed in 1971, the volume of bond speculation has been increasing at an exponential rate. Today gold bonds are historical relics. Governments won't put up with any meaningful competition against their obligations denominated in irredeemable currency. They know full-well that their issues would not stand a chance in such an environment.

A gold bond is an obligation that is payable, not in terms of itself, but in value existing *outside and independently* of the promises of the issuer. A government bond of current vintage is an *obligation* redeemable in an inferior instrument: a *non-obligation*, to wit: in non-interest-bearing irredeemable currency. This shatters the logical basis supporting the value of the bond. But this is not all. Ostensibly the value of irredeemable currency is supported by the assets against which they are issued as a liability on the books of the central bank. As these assets are the very same government bonds which promise to pay irredeemable currency to the bondholder at maturity, the logical basis supporting the value of the currency is shattered, too. The relationship between the government bond and the currency is an incestuous one, on which it is not possible to build long-term prosperity. These are fundamental problems that are not being addressed while fair weather lasts. In the meantime forces promoting foul weather are gathering steam. It is doubtful that these fundamental problems can be dealt with after the storm has begun.

Fleecing the Producers

If the logical basis for the value of government bonds has been shattered as it promises to pay its face value in nothing but itself, the question arises what then supports the value of these bonds? The answer is that government bonds are the very chips one needs in order to play in the casino otherwise known as the bond market.

The destruction of the gold standard by the government was thoroughly immoral, but the matter did not end there. It has corrupted the bond market right to its core. Today nobody in his right mind would try to save by holding the bond to maturity. The bond market is the haunt of speculators. It is a casino for gambling. The bond is the chip to be used at the gambling tables. Yet there is an important difference between the operation of the bond market under the regime of irredeemable currency, and the gambling casino. In the latter the gains of one gambler is the loss of another. This is also expressed by saying that gambling at the casino is a zero-sum game. Its effect on society at large is nil.

It is quite otherwise with bond speculation. Here we have a casino wherein the players can fleece outsiders. In a later Lecture I shall deal in full details with bond speculation and its effect on saving and production. Let it suffice here to state the bare fact that the bond market is a casino where speculators risk not their own funds but those of the savers and producers. As a result, the latter are always the losers, even when they haven't the slightest intention to play. We have an insane arrangement whereby productive activity is penalized and gambling activity is rewarded. As a result, the volume of productive activity constantly shrinks while that of financial activity constantly expands. Moreover, the latter expands at an exponential rate, as the financial markets attract all available funds, gobbling up the capital of the producing sector. Most ominous of all, talent is no longer attracted to production, entrepreneurship, and inventive activity. Capable young

people choose vocations related to the financial sector, the only place where they can hope to earn adequate rewards.

To recapitulate, under a gold standard capital markets function efficiently to channel the funds of savers to finance production for the benefit of the entire society. Their operation is accurately described by the hexagonal model which in particular explains the formation and stability of the rate of interest. Capital markets have been corrupted by the destruction of the gold standard. The rate of interest has been destabilized, inviting bond speculators to turn the capital markets into a gambling casino where the producers and savers can be fleeced. The moral responsibility for this subversion must be borne by the government and the profession of the economists for its failure to inform the public of what is happening.

References

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GOLD STANDARD UNIVERSITY

SUMMER SEMESTER, 2002

Monetary Economics 101: The Real Bills Doctrine of Adam Smith

Lecture 1:   Ayn Rand's Hymn to Money
Lecture 2:   Don't Fix the Price of Gold!
Lecture 3:   Credit Unions
Lecture 4:   The Two Sources of Credit
Lecture 5:   The Second Greatest Story Ever Told; (Chapters 1 - 3)
Lecture 6:   The Invention of Discounting; (Chapters 4 - 6)
Lecture 7:   The Mystery of the Discount Rate; (Chapters 7 - 8)
Lecture 8:   Bills of the Goldsmith; (Chapter 9)
Lecture 9:   Legal Tender. Small Bank Notes.
Lecture 10:   The Revolt of Quality
Lecture 11:   The Acceptance House; (Chapter 10-11)
Lecture 12:   Borrowing Short to Lend Long; (Chapter 12)
Lecture 13:   The Unadulterated Gold Standard

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Monetary Economics 102:   Gold and Interest

Lecture 1:   The Nature and Sources of Interest
Lecture 2:   The Exchange of Income and Wealth
Lecture 3:   The Janus-Face of Marketability

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Lecture 4:   The Principle of Capitalization of Incomes
Lecture 5:   The Pentagonal Model of Capital Markets
Lecture 6:   The Hexagonal Model of Capital Markets
Lecture 7:   The Bond Equation and the Rate of Interest
Lecture 8:   Lessons of Bimetallism
Lecture 9:   Speculation
Lecture 10:   The Kondratieff Long-Wave Cycle
Lecture 11:   The Ratchet and the Linkage

IN PREPARATION:

Monetary Economics 201:   The Bill Market and the Formation of the Discount Rate

Monetary Economics 202:   The Bond Market and the Formation of the Rate of Interest