Modern Money Network, The "Money Series" 2012-2013

1. The Historical Evolution of Money and Debt

Grey: My name is Rohan Grey and I am one of the organizers of this series. (Indeterminable) The school of (couldn't understand). I would like to thank you all for making it out tonight. We obviously put these series on because we think this is a pretty important issue right now. And we think that both for law students and the broader community of Columbia and New York City that this is an important topic to be coming to terms with as we go into the election season, and as we look at the next sort of stage in Americas economic development (Undeterminable). So I'm going to be very short. I just want to give you a few details about this event as well as the series structure and then I will pass it off to our monitor today William Harris. First of all this is designed to be a learning experience and we are not trying to have people sort of speak at you and then leave feeling uncomfortable. So if there are any questions at all, please keep them in your head and please make sure you ask them. We have devoted half the entire time in their series for questions in the audience. So we will be taking questions after the presentations are done. We are trying to get through as many of them as we can. So please make sure that if there is anything you feel curious about or if it doesn't gel with your understanding or anything like that. Please then feel sort of worried about it being not the right type of question. There is no wrong question in this context which is why we are trying to set up a dialog going forward [01:21]. Second thing I would like to say is thank you for everybody who registered online it gives us an idea of who is interested in this series and please make sure you check out all the quick readings associated with these events. As well as the blog posts and if you feel like contributing on the forum after this if there are any ideas that please make sure you do that.

If I may introduce the people here today first of all we have the monitor from Columbia university history department Professor William Harris. He is the William Shepard of history and the director the center of for the Ancient Mediterranean. Professor Harris has written a number of reports related to the history of money. Including Rome imperial Economy, War and Imperialism in the Republic of Rome, and has edited a number of books dealing with the monetary systems of the Greeks and Romans. And written a number of articles related to money. This is Randall Wray who will be speaking first who is a professor of economics at the University of Missouri Kansas City and the recent director at the center for full employment and price debility at that university. He is also a senior scholar at the Levi Economics Institute and a student of Hymen Minsky who is some people may know has recently gathered some attention in light of the recent financial crisis.

Professor Michael Hudson is a former Wall Street analysts and a distinguished professor of history at the University of Kansas Missouri. He is also the President of the Institute of Long Time Economic Trends. [02:42] and he has also authored over 10 books on finance, economics and the history of economics thought. His most recent book is available here for purchase. And will be available all year in anyone would be interested in looking at it later. And now ill hand it over to Professor Harris can get started. [03:04].

Harris: Thank you Ron for organizing it and helping to organize this, I think this education on (Indeterminable) this initiative very much. I am a professor of history and I teach about history of the Greeks and Romans [03:19]. I revel in my irrelevance in this sense but when these things are not so irrelevant. And think as far as roman history is concerned, you know, we might think of that economy and being the first complex economy that we know a great deal about and we know a great deal about the money systems of antiquity. Our focus obviously today is the here and now and what I may have to say about this is would probably be criticism about our distinguished speakers and that will be fairly limited. My job is to be a moderator and that is to say I prevent the speakers from going on for go on for an hour and a half each. [4:00] And to make sure everyone out there that want to emphasize anything and to make sure if anyone out there wants to make a point as it a question and can do so. So I will be alert to hands evading in the crowd. So we are going to start with Randle Wray. And so here's the mic [04:25].

Wray: Thank you, hopefully this is set up to the right one. Okay. I am going to be giving an overview of our view on money and in this upcoming series there will be quite a number of people that will be carrying on with this particular view of money which is an alternative view to what is normally taught in economics Courses. I think it is closer to what is taught outside of economics, including history. Let's start with a quiz. What I'm going to ask you questions that actually have a correct answer. These are not matters of theory, ideology, or theology. And they are not faulty proposals; they are just questions about the way that a sovereign currency works. [5:34] and by sovereign currency I mean a currency by which the national government issues its own currency. Such as the United States, Japan, Turkey. This would not include tenders of the dark foreign currencies and also would not include those European nations that adopted the Euro. [5:57]

You will see just one slide on the Euro but in the future you will have a whole session devoted to the Euro. Okay, so, here we go. Like a household, the government has to finance its spending out of its income or through borrowing. Is that true or false? You can write down your answer. Question two, the role of taxes is to provide finance for government spending. True or False? The National Government borrows money from the private sector to finance the budget deficit. True or False? [06:33] you might see that you get a lot of these wrong. By Running Budget Surpluses the government takes pressure off interest rates because more funds are then available for private sector investment projects. True or false? Persistent budget deficits will burden future generations with inflation and higher taxes. True or false? Running Budget Surpluses now will help build up the funds necessary to cope with the ageing population in the future. True or false? Okay, you can tally your results they are all false. Every one of those is false.

Recently there was a paper at the St. Louis Fed, let me read this; then translate. St. Louis Fed, if you don't know, is a bastion (Indeterminable) of monetarism. Freemen of economics, so what I am telling you is accepted from right to left. [07:31] Okay, " As the sole manufacturer of dollars, whose debt is denominated in dollars, the U.S. government can never become insolvent, i.e.., unable to pay its bills. In this sense, the government is not dependent on credit markets to remain operational. Moreover, there will always be a market for U.S. government debt at home because the U.S. government has the only means of creating risk-free dollar-denominated assets." Let me translate, the government can never run out of dollars. [8:00] It can never be forced to default. It can never be forced miss a payment. It is never subjected to the winds of bonds vigilantes. Okay, that is what the St. Louis Fed tells us. And you can find virtually identical quotes from

Bernanke and from Greenspan, Okay, and really from almost all economists. When president Obama tells you we are running out of money, that the piggy bank is empty. That is just not true. And all economists know that it is not true. To answer the question is to why they do they lie to you? There is a nice little video by which they interview Paul Samuelson. I won't read you this long thing but you can read it later.

He said, "There is an element of superstition that the budget must be balanced". It says at all times but then later on he talks about over longer periods of time. He likens it to an "old fashioned religion used to scare people so that they will behave in a particular way, and we have taken away a belief in the intrinsic necessity of balancing the budget if not in every year, [then] in every short period of time. If Prime Minister Gladstone came back to life he would say, 'uh, oh what have you done' and James Buchanan argues in those terms. I have to say that I see merit in that view." [09:30]

So he likens the to a superstition and an old time religion. We have to do this because we have a fear that our elected representatives will spend without them. And so then we make up this lie that the federal government is like a U.S. Household. You hear this all the time in the debates about the budget. The U.S. government is like a household, this is not true. Unless you have a printing press in your basement and you are printing U.S. dollars you are nothing like the Federal Government. The Federal Government creates money as it spends. So the framework that I am working from is called Modern Money. We will use modern money to answer these sorts of questions. What is money? Why is it accepted? What is the relation of the Government to its money? What is fiscal policy? What is monetary policy? Almost all the conventional wisdoms that have provided answers to these have got it wrong. [10:34]

Are these things money? The top one is a rock. Five hundred thousand years ago, some humans made scratches into these to record something. We don't know what they were recording. Below that these are bones that are fifty thousand years old. The humans carved more complicated marks in these to record something. We don't know what they are. Here is some more evidence of things to which humans carved notches or cuneiform. What are these? We know what these are because we can read them. Okay, does anyone know what the things on the left are? Talley sticks. Okay, stop and stub we have all heard the term. Rays of Talley so the crown when he wanted to buy sheep from you, would issue a tally stick to you. You would accept this in payment for the sheep you have sold to the king. [11:47] The stick was split and it was stocked and stubbed to keep a record and the clay shababe tablets Michael might be talking about.

How about these? Finally, you see something you know. Ah, there's money. What are these? These are records just like the tally sticks. They are records of credits and debits and of course today, most of the currency is insignificant. Most these records are kept electronically on balance sheets. And so what is money? [12:23] It's a social unit of account and in fact it is almost always a state money of account in the United States is the dollar. It's a record of a debit or a credit. The dollar is our money unit is like an inch or a foot or a pound. Okay, or a liter. It's a measuring unit. We then have money things that are denominated in our money unit. It is a little confusing in the United States because we use the dollar to indicate both the measuring unit and the thing that is being measured. The little piece of paper that is green. That has not always been the case [13:14] in monetary history but in the history of the United States it is not always true. We then have a hierarchy of these money things. My professor Hymen Minskey used to always say, “ya know anybody create money and he meant money things.” Then he would add, “the problem lies in getting it accepted.” The government’s money things are widely accepted. My money things are much less widely accepted. There is a hierarchy of these money things. The important thing is that almost always the money thing is denominated in the states money of account, Dollars. I could issue money things denominated in Wrays, okay, but it is much more common to denominate them in the states money of account. [14:03]

What backs up our money? In the sort of teaching in the early 80’s I would ask the students and probably three quarters of the economic students said gold. It wasn’t even true then. Today almost nobody is confused about this because we have Ron Paul running around saying we need to back our money with gold, right. So now they know that it is not. I like to read what it says on the paper currencies. U.S. Dollar this note is legal tender for all debts public and private. So, even more sophisticated students would say that it’s a legal tender, and it’s true that many currencies have a statement like that. Canadian Dollars, Australian Dollar, UK Pound, get out the pound and look at it. It has a picture of the queen and says I promise to pay the barer of five pounds on a five pound note. So in other words, if you take that five pound note to the queen she promises to pay you another five pound note. [14:56] That is all she promises, no gold, no legal tender. She promises to give you another one in exchange. Okay, so in Europe no legal tender law. So what backs these things up? So, some even more sophisticated students would have said “Fiat.” The government just says it’s worth a dollar, this gets a little closer to the truth but there is nothing that backs up the currency. You don’t want to look behind the dollar bill. There is nothing there right.

The alternative, the modern money view, use of the currency and value of money are based on the power of the issuing authority, not on the intrinsic value. That should be fairly obvious now. Where most of our money things are just electronic entries and numbers on balance sheets. Even in the case of the government, that is way it mostly spends not in a way of issuing green money, but through an electronic entry. The state played the central role in the evolution of money. [16:00] I think that Michael will talk about this. From the beginning used or perhaps purposely created the monetary system to move resources to the public sector. That was the purpose of creating a monetary system. We find, as Charles Goodhart says, that in almost every case we have one nation, one currency. Euroland is the first major experiment and breaking this link between nations and their currencies. It's not going so well for them, if you are paying attention to what's going on with them in Euroland. So separate currencies is not a coincidence, it's tied up with sovereign power, political independence, and fiscal authority. As a short hand, as what we say is taxes drive money. Taxes are denominated in the states unit of account. The state spends its currency into existence. [16:57] When you got that tally stick from the crown why on earth would you sell your sheep to the crown for a stick, because you could use your half of the stick to pay your taxes. Now, taxes are just one example of an obligation that the authority can put on you. In the old days, fees and fines were much more important than taxes, but today it is mostly taxes that drive money. But any authority or obligation will work to drive a currency.

How does a modern government actually spend? Through keystrokes. Okay, when the government wants to buy something or make a transfer payment, or social security payment, it credits a bank's reserves and the bank credits your demand deposit. All electronically, that is how modern states spend. So they are spending their own money unit into existence. Taxes just reverse that, the bank debits your bank's reserves and then debits your account. So it's credits and debits, okay, and banks are sort of like our scorekeepers, they keep track of these credits and debits for us. When the government credits more accounts than it debits we call that deficit spending. [18:21] that's what deficit spending is the government has just created more money than it has debited in tax payments. So the government net credits banks reserves and the bank net credits the account of the recipient.

Why does the government sell bonds? The government can buy anything it wants by crediting bank accounts. Why does it sell bonds? It doesn't need its own money from the population: it creates its own money every time it spends. It never needs to borrow. In fact, if you look at the balance sheet there is no way that the currency issuer can borrow its own currency. That makes no sense at all and in fact could not be done. So they do not borrow their own currency. Deficit spending leads to net credit to the banking system reserves. This will normally lead to excess reserves. If we are running a 1 trillion dollar budget deficit by identity we are creating a trillion dollars in excess reserves. In normal times banks don't want to hold excess reserves so they offer them in the overnight fed funds market in the United States that drives the overnight interest rate down, potentially to zero. And so what the Fed does is it sells bonds to drain excess reserves. [19:44] So bond sales are really part of monetary policy and it doesn't matter if it's the Fed that sells them or the Treasury that sells them but the purpose of selling bonds is to drain the excess reserves from the banking system so the banking system can hit its overnight interest rate target. Otherwise the interest rate would be driven to zero. [20:03] We are in unusual times where the Fed wants interest rates at almost zero so it can leave excess reserves in the banking system but this is not normal. So really bonds have nothing to do with borrowing, they have nothing to do with the fiscal operations of the state. They are part of the monetary policy operations to hit the interest rate target and a budget surplus is the opposite. You are always draining the reserves from the system and you put them back in by making open market purchases. [20:34]

Central bank policy, we have had a very long history debate about what the central bank should do, should it have a money target, should it have an inflation target, should it have interest rate targets. Okay, economists have finally reached a consensus. Okay, one that we discovered a long time ago, which is central banks always operate with an overnight interest rate target. No matter what they tell you that is what they are actually doing, an overnight interest rate target, and that means that they have to accommodate exactly the demand for reserves or they will miss their target. And that is why they use the bond sales or bond purchases in order to make sure the banks have the right amount of currency reserves. What this means is that the interest rate is set by the central bank and they hit the interest rate through open market operations. [21:24] Now, they set it anywhere they want. If we want zero interest rates we could have zero interest rates. It doesn’t matter whether we have a budget deficit of a trillion dollars or we have a budget surplus. We can hit our interest rate target. This is not true for a country that is not sovereign in a currency sense that I’m using this term. But for example, Greece cannot set its interest rate. It is subject to the bond vigilantes. The United States is not and neither is Japan, and not that Japan has budget deficits even bigger than ours and they have been doing it for more than 20 years and have had zero interest rates all along, because they want them to be zero.

So far everything I have told you is a description of reality. There is no policy recommendation, there is no theory involved in this. I did not say anything about what the government ought to do, I have been describing what the government actually does. [22:20] We could move on to policy that could follow from this. On here I will rely on Abba Lerner and what he called the principals of functional finance. Here we are talking about should not what the government actually does. The Government should spend more if there is unemployment. If you have unemployment that means that the government spending is too low. You need to spend more. If unemployment is eight percent, forget the budget deficit it is not important. We cannot go insolvent, we cannot miss a payment. We have to solve the unemployment problem. So the government should spend more. [22:58] Government could also reduce taxes which would be less effective but that is also a policy option. The government should supply more money, what he meant was bank reserves, if interest rates are too high. Of course that is not a problem right now, we are supplying plenty of reserves and the banks have plenty of excess. [23:16] and he insisted that the budgetary outcome and the government debt outcome should never be a primary consideration. What matters is unemployment, inflation, and where the interest rates are relative to where you want them to be.

Now, governments are not financially constrained. But they do impose, self-impose, constraints on themselves. They may be a good idea they may be a bad idea. The idea is that they are self-imposed. We have a variety of self-imposed constraints. We have a budget in process that is a self-imposed constraint, and that is probably a good idea to have a budgeting process. Okay, we have debt limits in the United States which is kind of unusual. We go ahead and tell the government go ahead and spend this amount per year but oh if you get up to the debt limit you cannot spend. [24:16] This is probably not a good self-imposed constraint but we could not have imposed it on ourselves we could remove it at any time. Normally we remove it every time we reach it, okay. This next time around maybe we won't, but it is self-imposed. Markets don't impose it, okay, it doesn't come from any law of nature. We imposed it. And we also have operational constraints. Some people will say hold on woah woah woah wait, what you told us before isn't quite right because the treasury has to write checks on its account at the central bank the Fed. This is true. The treasury has to have money in its account at the central bank, but we have found ways to make sure it always has the money in its account because otherwise it would keep bouncing checks to social security recipients, for example. So we never have the treasury running out of money in its account and I can talk about it if you want but when Stephanie Kelton comes she is the best on this topic. [25:16]

We also have the central bank is prohibited from providing treasury bank new issues. So the central bank cannot buy bonds directly from the treasury because that would allow the treasury to very easily to have that money in its account, but again we get around this very easily. The treasury just sells them to banks and then the treasuries account at the private banks is moved to the Fed. And then the Fed buys the bonds from the banks. So they get around it easily the point is that it is self- imposed. They use special depositories and special tax and loan accounts. [25:50]

Summary, am I doing alright? Okay, deficit spending creates private financial wealth. Net credits, note that central bank operations do not, we have the Fed doing its best, I suppose, to stimulate the economy. But the problem is that it cannot supply any net credits. It can buy assets from you but it cannot spend money into existence. It has to lend money into existence or substitute assets that you already got for a credit at the Fed. This does not stimulate much this way. As far as quantitative easing hasn't done anything and it won't, all it can do is drive interest rates to zero that is it. The treasury spends money into existence is much more effective. [26:45] It doesn't matter whether bonds have to be sold first, which is one of the self-imposed constraints, so long as the central bank accommodates reserve demand. There is no limit on the treasury due to the self-imposed constraint. It doesn't matter if the central bank is prohibited from buying new issues; it goes round about that through the banks. It doesn't matter if the treasury must have money in its account at the central bank to spend. The central bank and banks cooperate to make sure it always has the money in its account. [27:15]

Euro, one slide. This is an example of a non-sovereign currency through the view the member states. They gave up their own sovereign currencies, the lira when they joined the union. They adopted what was essentially a foreign currency for each one of these states. They become very much like USA states, and this is what we argue from before the time that the EMU began. We said that they are going to be subject to the market the same way Mississippi is subject to the market. The only surprise is that markets ignored that fact for as long as they did. They are constrained in their spending by taxes revenue, bond sales, and ultimately by the willingness of the ECB to lend to them and buy government debt, and were finding that the ECB is very willing and gradually and begrudgingly doing this. But there is a great uncertainty as to how far this will go and that's why Euroland is in such a mess. [28:12] The problem is that even though the ECB has been behaving in a way similar to what the Fed is doing, they have nothing like Washington, Uncle Sam to provide spending the Euros into existence. So the ECB can lend them but they have no equivalent to Washington to spend them into existence to solve their problem.

Conclusions, currency-issuing governments spend by crediting bank accounts and taxes by debiting those. It can always afford to spend more. There are still issues such as inflation, exchange rate effects, and interest rate effects, but there is no affordability problem. When the president tells you we have run out of money that is just not true. Sovereign currency gives more policy space, there is no default risk, the government can control its interest rates, and it can use policy to achieve full employment. [29:09] Now I need to be careful because people hear things I did not say. So let me go through a few things I did not say. I did say sovereign government faces no financial constraints; it cannot become insolvent in its own nonconvertible which just means we have no promise to exchange it for gold or for foreign currencies at a fixed exchange rate. But it can only buy what is for sale. It can't buy things that are not for sale in its own currency. In the United States this is not a problem, everything that is for sale in the United States is for sale in dollars, but that is not always true. Even in countries with sovereign currencies there are things not for sale in their own sovereign currency. So that can be a problem. [29:49] I did not say that the government ought to buy everything for sale. The size of the government is a political decision with economic effects. Is our government too big? That is a political question. Could we afford a bigger government, of course we could. Should we have a bigger government? Political Question with economic effects. I did not say that deficits cannot be inflationary. If government spending is too high you can get inflation. I did not say that deficits cannot affect exchange rates. If our government spent more, ran us up to full employment, it is possible the dollar could devalue. I'll tell you the empirical evidence for that is extremely poor. There is no direct link between the size of government spending and the size of budget deficits and the value of the currency. Alan Greenspan said, "We have no economic model that is able to explain the exchange rate movements." And the reason is we have speculation (inaudiable). And finally, if a sovereign government lets its currency float, that gives it more policy space. I won't go through that now but if you study economics you would know what I mean, and floating means the currency can go up and down. So yes it is possible that fiscal policy and monetary policy that are adopted to achieve full employment, for example, could have impacts on the exchange rate. Thanks you can read more at the blogs or at Levy institute or email me and I hope that this will be a fun set of lectures for you guys. [31:38]

[35:00] **Wray**: Again, in the old days, they didn't pay any interest, they aren't included as part of the measured government debt in the figures that you always read about. It might seem like a little quibble that I want to make clear: all of those credits that the government is giving are debt in the same way that bonds are debt. It's just that we don't promise to pay interest on them. But why does the government issue some bonds that banks use reserves to buy or that households can use their deposits to buy? The bonds promise to pay interest. Why does the government do that? What I was explaining is that the government does that to hit its overnight interest rate target.

[35:55] It is not a borrowing operation. In fact, the government cannot sell those bonds unless you already have government debt to buy them. You have to have currency or bank reserves or your bank has to have bank reserves to buy them. Because the only thing the government will accept as payment is its own debt-its own IOUS. So bond sales don't actually change the amount of government debt out there-they change the form from non-interest paying to interest paying. Now, does a sovereign government need to do this? No, they never need to do this. If they're happy with a zero interest rate, they can just leave the reserves in the banking system, and you will have a zero overnight interest rate.

[36:40] So, I realized people are concerned with government paying interest on its debt and it becomes a rising share of government spending. But, realize this: in the first place, the government doesn't have to sell any bonds; it can just leave reserves in the banking system on which banks could get zero in the old days now it's near zero interest. Second place, the government can choose the interest rate it pays; it's the sovereign issuer of the currency.

[37:25] It can sell the bonds to achieve the interest rate target that its central bank arm has set-50 basis points now. The government chooses that interest rate. And the third point is the government can always afford to make the interest payments because the government makes interest payments in the same way that it does any kind of spending-by crediting a bank account and as the St Louis Fed says, it can never run out of dollars.

[38:10] So, if the government chose, oh lets pay 10 percent on our government bonds and lets run the debt up to fifteen trillion dollars, is there any conceivable way the government wouldn't be abel to pay back the interest on that? The answer is no, there is no conceivable way, they can always afford it. Because they make the interest payments by crediting bank accounts. I'm not saying that we should have 10 percent interest rates; I'm not saying that we ought to sell government bonds at all-but it's a policy choice.

[38:45] Why does the government do it? Because your pension funds like to have government bonds in their portfolios and they like to earn interest. Maybe it's a good policy to sell bonds to stuff the pension funds full of them and pay them interest. But it's a policy choice-it's not forced by markets or natural law we choose to do it

[39:15] (**audience member**): Very briefly, I can't say I really understood your details but if this takes place as you say that they do, is there a transfer of wealth through this mechanism?

[39:40] **Wray**: This would be one of the considerations we would want to make when we decide whether it's a good idea to pay interest on government debt-you would want to look at who holds the government debt: if it was elderly, social security recipients with insufficient savings you might say it's a good policy. ON the other hand, if you find that financial wealth is extremely concentrated in the hands of the top one percent, you might say this is not a good policy. We need to find an alternative way to make sure our seniors have a decent income because paying interest on government bonds is flowing to the top.

[40:25] **audience member**: As I understand it, government is selling bonds to effect the fed funds rate and control interest rates in the domestic economy then why does it have an interest in selling bonds to foreign investors?

[40:50] **Wray**: It's selling bonds to hit its target rate and I know there's a lot of concern that foreigners hold the bonds, especially now it's Chinese before it was Japanese. How do they get them? They get dollar credits to bank accounts and to their central bank account at the Fed when they sell us stuff and we buy it with dollars so they have accounts that are full of dollars that are at the central bank and when we sell bonds they have the option of using those reserves to buy bonds.

[41:40]: So again, it's just a substitution from a non-interest bearing account at the fed to an interest bearing account at the fed. It's just like going from your checking account to your savings account, they transfer the funds and actually it is the fed that transfers the funds. The fed keeps the books for our government. Again, if we don't like paying interest to foreigners, have a zero interest rate target.

[42:10] **audience member**: I guess my question is what is the government's interest in offering the interest bearing vs. the non-interest bearing account.

[42:16] **Wray**: well, again, I don't personally think there is a very good reason for doing this, I think it's just that governments have always sold bonds and they've always kept their overnight interest rate over zero. Personally, I think the system would operate better without giving any interest paying debt and with an overnight interest rate target of zero permanently. I wouldn't use the interest rate the way most central banks use it, to try to fine tune the economy, I think it's been a disastrous failure.

[42:55] And it has led to lots of misunderstanding and payment of interest to foreigners.

[43:35] **Hudson**: It's very strange to have a historian and an economist on the same program. I was talking about if economics is correct, history is impossible according to everything you are taught at the economics department here. On the other hand, if history actually existed, then everything you are taught in economics is a parallel universe science fiction. They are incompatible. The economists say money and interest and credit all began by individuals bartering as if you were Alan Greenspan and Ayn

Rand somehow on a desert island very selfishly deciding how to barter trying to make a profit off each other. May they both win.

[44:32] If you look at history this isn't what happened. Randy began with a bone he said was 50,000 years old. It wasn't. It was 28,000 years old. He couldn't read it. My friend Alex Marshack at Harvard University of the Peabody Museum could read it. It was a calendar bone of the movement of the moon. The job of the chieftain in the Paleolithic societies that Alex described was to keep the calendar because all social and economic life centered around the movements of the season, the calendar, bring people together in the solstices or equinoxes.

[45:14] The reason I mentioned this was that money and credit and interest and enterprise only can be understandable once you understand the calendar which is not taught in the economics courses. I will explain what I mean. In these primitive societies from the Ice Age down to the Stone Age and even today, in the private societies it is considered very impolite to try to make money. If Alan Greenspan or Ian Rand, if one of them were the chieftains, they would be thrown out. It is considered bad manners. In Australia they say the nail that stands up from the wood gets nailed down.

[46:00] The reason is, in a low surplus society, if somebody makes a lot of money or a profit they make it off somebody else. Society cannot afford to have wealthy people make money at other people's expense pushing them below the break-even point so they are unable to support themselves and unable to have their own land because it you do this the people will immigrate and just leave the society. Or as we Irish say about modern elections, we vote with our backsides. When Alan Greenspan's plans are imposed on

Latvia, the working force emigrates. When it's imposed on Greece the working force emigrates.

[46:50] This has gone back over ten of thousands of years. So what happened in the development of the Western civilization was there was one part of the world where it was necessary that there was a surplus because while the ideal of every society was to be self-sufficient. Everybody had to grow their own foodstuffs. It was almost as important that if you lived in say modern day Moscow, where you have to have the farmer grow your own food. Most people in the ancient Middle East had plots on the land whether they lived on the land or in the cities.

[47:26] However, this Mesopotamia in the Near East had this soil that was deposited by rivers for millions of years which was rich and good for growing crops. Because it was deposited by rivers, it didn't have metal, didn't have stone and didn't have very much hard wood.   So they had to trade. The question is, if you're going to settle in a country which is where modern Iraq is, how are you going to get the raw material you need to make the Bronze Age the Bronze Age to make the implements you needed to do farming and other things.

[48:05] The solution was to set up public institutions, the temples, the palaces and basically these evolved out of the chieftains' households. Somehow, the chieftains were a multi-ethnic society Semites, Samarians. Nobody quite knows where they came from, and other groups who had to agree on a kind of honest program of standardization. The first standardization, the origins of almost every economic enterprise we have today.

Money, debts, payment of interest, contracts, legacies, all of these come from one part of the world basically in the third millennium BC from about 3200 BC to about 1200 BC.

[49:03] So the palaces were basically where the economic surplus was organized and the chieftains in the Anthropology Society were to support the widows and orphans and other dependents, the cripples in their households. When I say orphans and widows, in antiquity they did not have trust funds. Today we say we have to keep the interest high or the widows and orphans can't live. Orphans and widows were actually the poorest members of society, unlike they are today. In the bible when they talk about widows and orphans, they're not talking of the billionaires who the presidents are talking about when they say we have to keep the interest rates high and wages low so the widows and orphans can live.

[50:01] Anyway the temples essentially employed them in the weaving workshops. They would consign the textiles and the weaving things to travelling merchants, and the merchants would take something worth say 5 minutes and in 5 years they would have to give back twice as much, double the sum. That was the origin of interest. It was supposed to approximate what the merchants would get and as it happened, the 5 years was a period of 60 months and so the standard of the dollar they used, the standard of value, the minute was divided into 60 shekels just like minutes are seconds.

[50:51] So you had a doubling time of debt of 5 years. Now also, gradually the public institutions in charge of unused land or free land that wasn't settled, this land was leased to cultivators or sharecroppers for 1/3 of the crop. Based on this 1/3 of the crop, interest rates were also charged at 1/3. Basically, land would be advanced perhaps cattle or if people needed money would be advanced. Then we have even a function called the ale women who would go to a bar and run up a tab at the bar.

[51:35] Now the interesting thing is these debts were owed in barley and one of the first things rulers did would be to announce a set of prices at say, one shekel of silver was the equivalent of 1 litter of barley. So if you had barley you would pay in barley and there was also a rate of exchange if you had sheep, if you had wool with other ways of paying debts. The original was price scheduled to enable people to pay in kind.

[52:29] Obviously people didn't go around with barley in pocket. During the crop year people didn't use money. What they would do essentially during the crop year was to run up a tab and they would run up a tab with the ale women for money that would be due on the threshing floor at the seasonal harvesting time. In fact almost all the barley debts, and we have the contracts from Mesopotamia, were due on the threshing time at the barley time, and the threshing debts were due at the threshing time.

[53:00] This principal lasted until about 1200 BC. Then instead of global warming now, there was a global freezing then, there was a dark age where we sort of lose the statistics until about 750 BC. Then what you had was a gradual recovery where you had traders from Syria across the Mediterranean to Greece antiquity. That's when the civilization began to go downhill. It's usually considered the start of Western Civilization; but what people think was the start of Western Civilization was really the falling apart of Near Eastern origins of civilization of this autonomy that had been put together in a rather well-organized economy and all of a sudden instead of the public institutions, you have local chieftains occurring and in Rome very soon you had aristocratic families overthrow the kings.

[54:03] The functions that were in the public sector in the Near East all of a sudden were taken over by private families; let's call them the mafia because that is basically what that anarchy was. There was a change in policy from the Near Eastern Bronze Age to classical antiquity. When a new ruler would come to the throne in Mesopotamia, the first thing they would do on their first full year of the throne, was to proclaim a clean slate and that's because a lot of the debts that were denominated in barley couldn't be paid.

[54:42] If you look at Hammurabi's Laws from 1750 BC if there was a flood, the debts were annulled, if there was a drought the debts were annulled, if there was military hostility the debts were annulled or if there was any reason the debts could not be paid, they were annulled and there was a general understanding that the debts tended to grow faster than the means to pay. Now we have the mathematical training texts that scribes were taught in Babylonia in 2000 BC. You can imagine my surprise when, after teaching graduate economics for many years here in New York, that I found the mathematics used in 2000 BC were far superior to the mathematical models being used today.

[55:22] Not simply because the scribes had to learn quadratic equations, but because they had two basic contrasts. They had the doubling time of debt. One of the exercises was how long does it take a minute to double in value, and the answer is 5 years. How long does it take to quadruple and the answer is 10 years. How long does it take to multiply 62 times. The answer is 30 years. So you knew that there was this exponential curve of debt very rapidly.

[56:00] What they also had were curves for the growth of herds and output, and that was an S curve and that was just like all economics statistics today show an S curve, but what you have, and I'll show you shortly, is the tendency for the debts to grow faster than to be paid. When the rulers came in, they would cancel the debts for a very good reason. Unfortunately, in Babylonia there was never an explanation book on how to do things. One of the Roman historians wrote one of the explanations he was given by the Egyptians for why the Pharaohs canceled the debts. They said if we don't cancel the debts, then the debtors are going to fall into bondage to the creditors, as you can read in the bible.

[56:46] Then nobody is going to fight in the army and then we will be defeated. Then so to keep a land-tenured army we have to return the land to the people who have lost it to the creditors. We have to free them from bondage. Otherwise, everybody is going to leave, decreasing the population, and they will be defeated. In the third century BC, a Greek general called Tacitus wrote a manual on how to conquer a town and how to defend a town. If you want to conquer a town, you have to say I want to cancel your debts and you'll get the people on your side.

[57:23] If you want to defend a town, you say I'm going to cancel the debts of everybody as soon as we win. That's what Cory Lenus did in Rome; that's what Shakespeare's play was all about, went back on his word. Same thing on Zedekiah in the bible promised to cancel them and he didn't. That's what makes the first millennium BC very different from the Bronze Age. What happened by the time of 133 BC was in Rome you basically had a Milton Freed philosophy of free markets.

[58:03] What they realized in Rome was exactly President Nixon and Henry Kissinger realized in Chile. You can't have a free market for creditors if you don't murder everyone who disagrees with you. If you don't kill everyone who wants to cancel the debts, if you don't kill everyone who knows history, if you don't kill the labor leaders you don't have a free market a la carte style. So they murdered the groche, they murdered the supporters of the debt cancellation, and essentially there was a 100 year social war, and by the time the empire got going, ¼ quarter of the Roman population was indebt bondage or in debt slavery. So I'm going to do a fast forward to the modern era.

[58:51] In the medieval time after the Dark Age, you had something new that didn't occur in antiquity. You had public debts and all these debts were for war debts. Basically it began with the Templars after the Crusades and then the Venetians and then the Genoese and the big bankers lending to kings in order to wage war. By the time of the Napoleonic Wars, 75% of Britain's public budget was spent on debt service. At the time of the American Revolution, Adam Smith and Reverend Richard Price and other people said congratulations to the American revolutionists.

[59:36] They said let them go free. It's not worth waging war. Here is a chart that was done in 1776 by Reverend Richard Price who said if one penny was saved at the rate of 5% at the time of Jesus, this single penny would now be a solid sphere of gold extending from the sun up to the planet Saturn. I actually recalculated it and it could go all the way to the planet Uranus. He was trying to show the impossibility of ever trying to pay the national debt as it amounted to.

[1:00:16] Now we know there were many rich people who did save pennies at the time of Jesus. In fact Seneca, a philosopher, made over 20% on his loans to Asia Minor. None of these debts ever were repaid because again and again there was a collapse when there was a bankruptcy. The debtor would fall into bondage. The good thing about bankruptcy and about modern bankruptcy laws, is not only is the debt cancelled, but something even better happens. The savings are cancelled, and today you have 90% of the net savings in America held by the upper 10% of the population.

[1:01:00] These are the population today that are trying to do the American thing to impose a kind of debt peonage on the population where you have a situation where if you buy a house, you have to take a 30 year mortgage and essentially spend the rest of your life paying off the mortgage debt to have a place to live. Whereas land used to be free to all citizens originally. To get an education, you now have to take out a student loan that is going to absorb your income for 10 or 20 years that is not subsequent to the bankruptcy laws; that cannot be wiped out.

[1:01:47] Essentially whether you get a job or not you have to pay. The result is that, as many of you students have learned if you are unable to get jobs, you have to live with your parents. The parents have to pay the loan. The Republican presidential candidate Mitt Romney said look borrow the money from your parents and repay. They're not going to dun you like I was reading about in the Wall Street Journal, is happening with student loans. You're having the entire society now loaded down so far with debt that ¼ of American real estate owes a larger debt than money is available for.

[1:02:22] So what you're having is debt deflation. That's why you're having the bad employment statistics that Monday or the day after President Obama's speech out came the employment figures, and every newspaper article of almost every economic statistic had two words: unexpected and surprising. Yesterday the Financial Times reported the new consumer credit in America and it says consumer credit in the U.S. is unexpectedly down in July and then who could have thought debt revealed surprise fall in debt.

[1:03:08] Here's what happens. People have to pay off the debts or they get the dunning phone calls, as many of you students may get. If you pay the creditor, you are not able to buy goods and services. Something has to give and in America you have about 40% of the American workers' budget going to pay for housing, 15% of the wages is taken out for Social Security and Medicare and loans to the government. As Randy had said, the government really doesn't need the money, but the government says but we want to keep our wages down. We want to keep spending power down so we're making you pre-save for Social Security so we have a huge fund.

[1:03:59] Now that we have this much money, we can afford to cut taxes on the rich and pretend that somehow the whole thing is in balance until you the Boe Simpson Commission that says well we can't afford to pay. We only pay the rich, not the Social Security people. After all that's basically the political dynamic we have here. So what you're having as the result of the government absorbing money for debt service and the government bailing out the banks with $13 trillion of bank give-aways is that the debts have been left in place for the American economy at such a high rate that the corporations must pay a high amount of money. If you're hiring a worker there you have to pay the worker a high enough wage to pay 40% of the income for housing, 15% for Social Security and Medicare, 15% for other debt and about 10% for other taxes.

[1:04:57] So before a worker has enough money even to begin buying goods and services, 75-80% of his income goes to the finance, insurance and real estate sector, and the economy, basically, is two economies. The result is, at least in America, things have been kept going because the Federal Reserve and the Government basically has been able to keep monetizing enough money to keep the economy from collapsing. That's not the case in Europe. Every central bank was founded to do just exactly what Randy had said. To monetize the government debt, mainly the war debts, but basically to create money and say here's money, we're spending it in the economy.

[1:05:46] This growth in debt in every country is what has provided the provide sector with enough money to keep going and transacting goods and services. For the first time in modern history, under the Clinton Administration, we actually ran a budget surplus. That meant the government was not spending money into the economy and that people had to borrow from the banks had interest. The government balanced the budget. This was a bonanza for the banks because now they would lend to people, and Alan Greenspan said borrow against your house. You can always sell it to the greater fool three years down the road.

[1:06:28] So take out a 3 year mortgage. It doesn't have an exploding interest rate that goes up because the average American moves every 3 years and you can always find somebody else because Alan Greenspan is going to be flooding the economy with enough money to make you all rich by going into debt. Well this is the first time in history when people thought they could get rich by going into debt. Every society until now has tried to stay out of debt to avoid mortgaging the house, to avoid taking the risk. But now they are going into debt. We can see the disaster that would happen in America by looking at Europe where the European union does not have a central bank and it is monetizing the government debt. The bank loans were written by the banks to force the banks to provide all of the money that the private sector needs to grow.

[1:07:21] Sure enough the debt has absorbed everything so that in this week's New York Review book George Saurus has an analysis along very similar lines saying exactly why the European union is falling apart today. The phenomenon we're facing today is debt deflation, people having to pay the debt and it is needless. In antiquity, the rulers would have simply wiped out the debt, but people think that's unthinkable. On this very floor in this very same building on Sunday, Sheila Baier gave a talk to the Ultimate Banking Group of Occupy Wall Street and was saying how she wanted to close down Citibank.

[1:08:06] She said there was no reason at all that we couldn't have paid all the insured depositors at Citibank. What would have been wiped out were all the derivatives and the gambling that didn't have anything to do with real lending for goods and services. The banks lend essentially not to produce but against collateral, to bid up real estate prices and stock prices. The government spending that Randy was talking about, is spent on goods and services, guns and bombs and the things governments spend money on, but also employment and growth and bridges. So you have a completely different kind of money, as opposed to bank credit, spent on different things such as goods and services as opposed to prices. So I wanted to give you this background to conceptualize that there are two spheres two the economy.

[1:08:57] The Asset Sphere of real estate and financial security as opposed to the goods and services. The Economics Department talks as if money is only spent on goods and services but 99% of bank credit is spent on mortgages, bank loans, stocks and bonds and that is all invisible in the economics curriculum. That is why we are here today in a series of talks to fill in what you don't get in the Economics Department.

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