Why the "miracle of compound interest" leads to financial crises*

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"If men, living in equality, should grant to one of their number the exclusive right of property; and this sole proprietor should lend one hundred francs to the human race at compound interest, payable to his descendants twenty-four generations hence, – at the end of 600 years this sum of one hundred francs, at five per cent., would amount to 107,854,010,777,600 francs; two thousand six hundred and ninety-six times the capital of France (supposing her capital to be 40,000,000,000, or more than twenty times the value of the terrestrial globe!" — Proudhon (1840)

RESUMEN

En este trabajo quiero discutir la tendencia del sector financiero a dominar, desinflar y polarizar las economías, impidiendo el potencial económico. Entender esa dinámica financiera es esencial para explicar por qué todas las naciones no están funcionando en su potencial tecnológico hacia el que el liberalismo clásico tiene como objetivo de realizar, y por qué la economía mundial se está polarizando, al igual que las economías nacionales, incluso en las naciones más industrializadas.

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Palabras clave: Rendimientos crecientes, tasa de interés compuesto, financiarización, finanzas Ponzi, inflación-precios-activos, economía de burbuja, servidumbre de deuda.

ABSTRACT

In this paper I want to discuss the financial sector's tendency to dominate, deflate and polarize economies, thwarting economic potential. Understanding these financial dynamics is essential to explain why all nations are not operating up to the technological potential toward which classical liberalism aimed, and why the world economy is polarizing, as are domestic economies even in the most advanced industrial nations.

Key words: Increasing returns, compound rate of interest, financialization, Ponzi finance, asset-price-inflation, bubble economy, debt peonage.

JEL: E31,E44, G10

RÉSUMÉ

Dans cet article je veux discuter de la tendance du secteur financier à dominer, dégonfler et polariser les économies, déjouant potentiel économique. La compréhension de ces dynamiques financières est essentiel d'expliquer pourquoi toutes les nations ne sont pas d'exploitation en hausse au potentiel technologique vers laquelle le libéralisme classique vise, et pourquoi l'économie mondiale est de polarisation, tout comme les économies nationales, même dans les nations industrielles les plus avancées.

Mots clés: L'augmentation du rendement, composé de taux d'intérêt, la financiarisation, la finance Ponzi, des prix des actifs de l'inflation, l'économie de bulle, la servitude pour dettes.

I first met Erik Reinert in 1994 at an economic history conference in Germany, and have been a member of his Reality Economics group since its founding. Erik Reinert's Reality Economics group has revived the awareness of econo-

mists whose names have disappeared from most histories of economic thought, even as many schools have dropped courses in that topic itself. Most students only are taught today's mainstream orthodoxy, not being informed of the equally long history of another canon – one that turns out to be more helpful in explaining economic history and today's dynamics.

Looking at today's global economy, the obvious question to ask is why more economies haven't achieved the technological potential reached by North America and Europe. Given the fact that technology is fairly universal, why aren't all nations operating up to this potential?

Most of the papers produced by the working group here in Oslo have emphasized increasing returns and the technological basis for comparative advantage. Reviving the 19th-century writings of German and American national economists, Reinert and his colleagues have reviewed the arguments why latecomers may require protective tariffs, subsidies and public infrastructure investment to catch up, especially in the spheres of education and public health. Increasing returns tend to widen the competitive advantage of leading industrial nations (whose agriculture has achieved equally remarkable productivity gains by being industrialized into agribusiness). The effect is to render labor, capital and technology in the less developed periphery obsolete, under-educated and under-supplied with public infrastructure. The result is a chronic trade and payments deficit, building up over time to impose a heavy foreign-debt burden.

The technological core of economies is wrapped in a framework of property laws, financial practices and taxes that vary sharply from one country to another. This institutional context imposes an extractive overhead of property claims and debt service that are largely a vestige of the conquest of Europe by the Vikings and their kin, who appropriated the public commons and levied property rents. These military conquerors were followed by the Templars and Italian bankers, who legitimized the charging of interest and standing royal war debts.

The financial counterpart to increasing returns in the production sector is the "magic of compound interest" – the tendency of debts to multiply by purely mathematical principles, independent of the "real" economy's ability to pay. Early analysts of compound interest pointed out that the debt overhead tends to expand autonomously, eating into the "real" economy, slowing it down and polarizing property and income by diverting revenue away from production and consumption to pay creditors.

What distinguishes the "other canon"[1] from today's dominant orthodoxy is its rejection of the assumption that economies tend to stabilize automatically in a fair and equitable balance, and hence do not require government regulation – and that public enterprises operate more efficiently if transferred into private hands. Accusing government planning of being inherently inefficient and hence needlessly costly, today's self-proclaimed neoliberals claim that the dynamics of free markets will overpower whatever government planners try to impose.

Defending the need for active public policy, the other canon finds that such a balance requires that markets be shaped by selective taxation, public regulation, subsidies and infrastructure investment. Privatization of public enterprises and other parts of the public domain adds to their cost of production by building in financial charges and capital gains by owners, and higher payments to the financial managers who end up as planners of these assets.

According to this approach, the slogan of "free markets" is merely a euphemism for centralizing planning power in the hands of financial and other vested interests that are seeking to break away (that is, "free") of oversight, regulation and taxation by elected officials. They seek above all to make central banks independent – that is, controlled by the commercial banking interest – and to concentrate trade and tax policy in the hands of the IMF and World Bank globally, and domestically in an Executive Branch controlled by financial and property lobbyists. Thanks largely to the privatization of election financing and its rising media advertising costs in today's political campaigns, the vested property and financial interests have succeeded in un-taxing and deregulating themselves. This is just the opposite policy from that advocated by the classical liberal political economists from Adam Smith through John Stuart Mill. To these "original" liberals, a free market meant a market free of free lunches for the rentier interests. Their idea of freedom was one of equal opportunity for all economic players.

It is important to recognize that every economy is planned. Forward planning began in the Neolithic to schedule the planting and harvesting of crops, as well as sea and caravan trade and the festivals that organized the community's basic rhythms. The calendar emerged as the major planning vehicle, usually kept by sky-chiefs. In today's world, corporations plan how much to produce for the market, how much advertising can create a demand for their products and build brand loyalty, and where to focus research and development spending. Their lobbyists ask governments to invest in infrastructure, grant subsidies, price supports and tax concessions ("loopholes"),

1 See appendix.

rezone land sites, regulate foreign trade and provide police protection against fraud and other crime. Consumers plan how much to allocate for education and save for retirement, how long to stay in school, and seek regulation of workplace conditions, public health and related shaping of the economic context in which market forces operate.

Given the fact that all market participants engage in forward planning of one sort or another, the great political question concerns just who is to do the planning. To the extent that government relinquishes this role, planning passes into the hands of the economy's financial managers. When the government steps aside, they pick up the slack. Unfortunately, their time frame is shorter and their aims are more narrowly self-serving than those of public officials. Most seriously of all, they seek the economic rent and extractive financial returns that classical liberals and Progressive-Era reformers sought to minimize by government regulation or taxation.

Today's pattern of economic development and taxation is not what most 19th-century economists expected to see. Viewing economic evolution in terms of rising productive powers – and hence, living standards – they thought that economic management would pass naturally into the hands of industrial engineers under a regime of democratic parliamentary reform. They also expected governments to play a growing role, above all in by providing the infrastructure needed to make domestic industry and agriculture more competitive, and to prevent monopolies and other special interests from extracting rent or otherwise profiteering from the economy at large.

The classical economists characterized economic rent as "unearned income," and John Stuart Mill called capital gains an "unearned increment," best typified by the rising land values that accrued to landlords "in their sleep." The aim was for prices to reflect only the returns to socially and technologically necessary costs of production, and to maintain an economy in which after-tax income is earned, not achieved by property privileges of special interests. Taxes levied on these rentier gains would be paid out of the economy's "free lunch." Rather than raising prices, taxing these returns keeps land values and the price of stocks in monopolies low.

To defend their moral and fiscal right to this income, and to minimize public regulation and taxation of price gains for land, stocks and bonds, the rentier interests depicted their returns not as extractive but as a bona fide cost of doing business, and hence earned. They even went so far as to claim that these returns acted as the mainspring of economic growth. On this basis the rentier lobbies in modern times have advocated that taxes should be levied on labor, not on the land's economic rent or the extortionate prices and related gains demanded by monopolies.

In this paper I want to discuss the financial sector's tendency to dominate, deflate and polarize economies, thwarting economic potential. Understanding these financial dynamics is essential to explain why all nations are not operating up to the technological potential toward which classical liberalism aimed, and why the world economy is polarizing, as are domestic economies even in the most advanced industrial nations.

The economics of compound interest

When I began to study the economic origins of modern civilization in the ancient Near East, I was struck by the degree to which the exercises taught to Babylonian scribal students c. 2000 BC were in some ways more realistic and even more mathematically sophisticated than the neoclassical models taught today. For starters, the rate of interest was expressed as a doubling time. A model Babylonian scribal exercise from circa 2000 BC, for instance, asks the student to calculate how long it will take for a mina of silver to double at the typical Mesopotamian rate for commercial loans, one shekel per mina per month – that is, 1/60th per month, 12/60ths per year – an amount equal to 20 percent in modern decimalized terms.[1][2] The answer is five years. This was the normal time period for backers to lend money to traders. (Assyrian loan contracts from about 1900 BC typically called for investors to advance 2 minas of gold, getting back 4 in five years.)

How long could the process go on at these rates? Another Babylonian scribal problem asks how long it will take for one mina to become 64, that is, 26. The solution involves calculating powers of 2 ($2^2 = 4$, $2^3 = 8$ and so forth).[3] A mina multiplies fourfold in 10 years, eightfold in 15 years, sixteenfold in 20 years, and 64 times in 30 years, that is, in six five-year doubling periods.

The idea is expressed in an Egyptian proverb: "If wealth is placed where it bears interest, it comes back to you redoubled" (Lichtheim, 1980, p135). Another popular image compared making a loan to having a baby,[4] depicting the reproduction of numbers in sexual terms. What was "born"

2 The example comes from a Berlin cuneiform text VAT 8528. Karen Rhea Nemet-Nejat, Cuneiform Mathematical Texts as a Reflection of Everyday Life in Mesopotamia (New Haven 1993 = AOS Series Vol. 75) provides a bibliography. Most of these exercises are schoolbook problems, not statistics resulting from real-life examples. But precisely for this reason their principles illustrate the relationships being expounded

3 This arithmetic exercise comes from VAT 8525. It is discussed by Hildagard Lewy, "Marginal Notes on a Recent Volume of Babylonian Mathematical Texts," Journal of the American Oriental Society 67 (1947):308 and Nemet-Nejat, op. cit.: 59f.

4 The word for "interest" in every ancient language meant a newborn, either a goat-kind (mash) in Sumerian, or a young calf – tokos in Greek or foenus in Latin. The "kid" or "calf" paid as

was the "baby" fraction of the principal, 1/60th, born with the new moon. Only when the accruals of interest had grown to be as large as their parent, after the fifth year, were they deemed "adult" enough begin having new interest "babies" on their own, for only adults can reproduce themselves. Compounding began only after the principal had reproduced itself – "matured" – after 60 months had passed.

The principle is familiar today in what accountants call the "Rule of 72": To find the doubling time of a sum lent out at interest compounded annually, divide 72 by the rate of interest. A rate of 5 percent doubles the principal in just over 14 years (72/5 = 14.4). A 6 percent rate has a doubling time of 12 years; a 7 percent rate in 10 years. In 20 years the 7 percent loan will have redoubled, to four times the original sum; and in 30 years to eight times. This simple formula works for rates up to 20 percent, which happens to be the rate of interest charged when the practice first was developed in the third millennium BC in Sumer – what today is southern Iraq. The 20 percent rate was not reached in modern times until the U.S. economic crisis of 1980, as the prime rate commercial banks charged to their major customers.

These Babylonian examples are composed from the vantage point of lenders and investors, not debtors. There was no compounding of interest arrears. Investors who wanted to keep on multiplying their money had to find new borrowers and draw up new loan contracts in which to place their money to continue the compounding process. With the passage of time it must have become harder to find enough such opportunities, because economies do not grow exponentially over protracted periods of time, but in the S-curves that Carlota Perez's paper describes, and which was known to Babylonian scribal students who were taught to calculate the growth of herds of animals in such complexity that the early translators thought that the numbers described actual practice. These exercises show an awareness that economic growth tended to taper off, not to speak of interruptions as a result of warfare, drought and flooding. The real-world economy was unable to keep up with the exponential growth rates projected in purely mathematical calculations of sums being placed at interest. The volume of trade could not keep on multiplying exponentially, and domestic lending opportunities also were limited.

interest was born of silver or gold, not from borrowed cattle as some modernist economists once believed, missing the metaphor at work. I discuss the sexual mathematical imagery of antiquity's words for interest in "How Interest Rates Were Set, 2500 BC – 1000 AD:PRIVATE Máš, tokos and fænus as metaphors for interest accruals," Journal of the Economic and Social History of the Orient 43 (Spring, 2000,p:132-161).

Financial returns therefore probably accumulated in the hands of lenders more rapidly than they could find commercial opportunities. This phenomenon has proved fateful for lending in today's capital markets to spill over to increasingly risky ventures. Antiquity's laws said that merchants did not have to pay their backers if their ship was robbed by pirates or sunk, or if their caravan was robbed. Creditors thus shared in the risk of the merchants they financed (a practice that Islamic law revived). Near Eastern rulers resolved the tendency toward debt instability by annulling personal and agrarian debts when large numbers of cultivators were unable to pay as a result of flooding, drought or military disruption. This subordinated creditor claims to the economy's ability to pay.

In the modern epoch, J. P. Morgan and John D. Rockefeller are reported to have called the principle of compound interest the Eighth Wonder of the World. The late 19th-century writer Michael Flürscheim described Napoleon as voicing a similar idea upon being shown an interest table and remarking: "The deadly facts herein lead me to wonder that this monster Interest has not devoured the whole human race." Flürscheim commented: "It would have done so long ago if bankruptcy and revolution had not been counter-poisons." And that is just the point, of course. Something must give when the mathematics of interest-bearing debt overwhelms the economy's ability to pay. For awhile the growing debt burden may be met by selling off or forfeiting property to creditors, but an active public policy response is needed to save the economy's land and natural resources, mines and public monopolies, physical capital and other productive assets from being lost to creditors.

To illustrate the dynamic at work, Flürscheim composed an allegory pitting the Spirit of Invention against the Demon of Interest and his offspring, Compound Interest, in a battle to see whose powers were stronger. The Spirit of Invention had an army of tools and machines, water power, air and wind power, fire and steam power to drive machinery. But Flürscheim asked whether its minions really would bring about a golden era, or whether this power could be conquered by finance capital and made to serve it by paying tribute rather than serving mankind in the form of higher living standards. To illustrate the principle at work he related a Persian proverb about a Shah who wanted to reward the inventor of chess, and asked what the man would like. The man asked "as his only reward that the Shah would give him a single grain of corn, which was to be put on the first square of the chess-board, and to be doubled on each successive square; which, to the surprise of the king, produced an amount larger than the treasures of his whole kingdom could buy" as the amount doubled on each of the board's 64 squares.

For the first row of the board the amount of grain being measured out was modest: 1, 2, 4, 8, 16, 32, 64, 128 grains, reaching the power of 27 but still not even a cupful. By the second row, it became a large sackful: 215, or, 32,768 grains. It soon became obvious that to fill the entire 64

squares – eight rows – would 2123, far more than n the kingdom or, for that matter, the whole world possessed. The moral, Flürscheim concluded, was that in due course the mathematics of compound interest was "much more powerful than the Spirit of Invention," ending up enslaving it. (Flürscheim, 1902, p 327-33)

The political fight in nearly every economy for thousands of years has been over whose interests must be sacrificed in the face of the incompatibility between financial and economic expansion paths. Something has to give, and until quite recently creditors have lost. This is the point that modern economists and futurists fail to appreciate. Financial claims run ahead of the economy's ability to produce and pay. Expectations that interest payments can keep on mounting up are "fictitious," as Marx and other 19th-century critics put it. When indebted economies and their governments cannot pay, bankers and investors call in their loans and foreclose.

Why isn't this the starting point of modern economics? As Herbert Stein famously quipped: "Things that can't go on forever, don't." The accrual of savings (that is, debts) is constrained by the economy's inability to carry these debts. Recognizing that no society's productive powers could long support interest-bearing debt growing at compound rates, Marx poked fun at Richard Price's calculations in his Grundrisse notebooks (1973:842f.) incorporated into Capital (III:xxiv). "The good Price was simply dazzled by the enormous quantities resulting from geometrical progression of numbers. … he regards capital as a self-acting thing, without any regard to the conditions of reproduction of labour, as a mere self-increasing number," subject to the growth formula: Surplus = Capital (1 + interest rate)nIndividuals found it difficult to make use of the compound interest principle in practice. Peter Thelluson, a wealthy Swiss merchant and banker who settled in London around 1750, set up a trust fund that was to reinvest its income for a hundred years and then be divided among his descendants. His £600,000 estate was estimated to yield £4500 per year at 7½ percent interest, producing a final value of £19,000,000, more than thirty times the original bequest.

Thelluson's will was contested in litigation that lasted 62 years, from his death in 1797 to 1859. Under William Pitt the government calculated that at compound interest even as low as 4 percent, the trust would grow so enormous as to own the entire public debt by the time a century had elapsed. This prompted legislation known as Thelluson's Act to be passed in 1800, limiting such trusts to just twenty-one years' duration. By the time all the lawyers were paid, "the property was found to be so much encroached on by legal expenses that the actual sum inherited was not much beyond the amount originally bequeathed by the testator"[5].

5 Palgrave's Dictionary of Political Economy, citing the Annual Register (1797) and Chambers' Encyclopaedia vols. 8 and 10.

But the savings of the living have continued to mount up. The banker Geoffrey Gardiner observes that in the late 1970s, "the burgeoning oil revenues of the producers were further gilded by the addition of high interest earnings. At their highest British interest rates had the effect of doubling the cash deposits of the oil-producers in only five years, or 16.3 times in twenty years!… The wisdom of an earlier age, which had led to the passing of 'Thelluson's Act' to discourage the establishment of funds which compounded interest indefinitely, had been forgotten"(Gardiner, 1993, p135).

In his famous essay on usury, Francis Bacon observed: "Usury bringeth the treasure of a realm into few hands, for the usurer, being at certainties, and the other at uncertainties, in the end of the game most of the money will be in the box, and a State ever flourisheth where wealth is more equally spread." The French socialist Proudhon echoed this basic principle in 1840, in his axiom that the financial "power of Accumulation is infinite, [yet] is exercised only over finite quantities." "If men, living in equality, should grant to one of their number the exclusive right of property; and this sole proprietor should lend one hundred francs to the human race at compound interest, payable to his descendants twenty-four generations hence, – at the end of 600 years this sum of one hundred francs, at five per cent., would amount to 107,854,010,777,600 francs; two thousand six hundred and ninety-six times the capital of France (supposing her capital to be 40,000,000,000, or more than twenty times the value of the terrestrial globe!"(Proudhon, n.d, p 215). Hopes to increase human welfare through higher economic productivity would be stifled, Proudhon warned (in good St. Simonian fashion), if the self-expanding power of interest-bearing claims were not checked by policies to replace debt with equity investment.

The moral is that no matter how greatly technology might increase humanity's productive powers, the revenue it produced would be absorbed and overtaken by the growth of debt multiplying at compound interest.

Financialization as an extended Ponzi phase of the credit cycle

Every country has seen its ratio of debt to national income rise in recent years. Most bank credit – some 70 percent – is for real estate mortgages, reflecting the fact that real estate remains the economy's largest asset even in today's industrialized world. These loans increase the volume of debt attached to the economy's property and income streams. Also rising are corporate debt/equity ratios. Bankers begin to extend credit against what they project that property prices will be worth in the future, given current rates of asset-price inflation. The dependence on credit increases the debt burden.

Minsky described this as the third and final "Ponzi" phase of the financial cycle. The term was coined to describe Carlo Ponzi's practice in the 1920s of promising much higher returns to investors than they could earn elsewhere. He pretended to make arbitrage gains by buying international postage stamps and cashing them in for different currencies, profiting from shifts currency values that were not reflected in the International Postal Union's price policies. In reality, he didn't use the money for this purpose at all, but simply repaid early subscribers to his scheme out of money that new investors were putting in, believing that his high payouts to early investors reflected actual trading gains.

It seems ironic at first glance – but quite logical when one stops to think about it – that the largest and presumably most secure borrowers are the first that are able to enter into this "Ponzi" stage of being able to most easily add the interest onto their existing debt balance, year after year. The irony is that precisely by being so large and prestigious, the leading classes of borrowers tend to become insolvent faster than anyone else: the U.S. Government, foreign governments, real estate investors, and the biggest banks.

The world's largest borrower is the U.S. Government. Its debt now amounts to some US $ 10 trillion. It has been built up by running budget deficits – at first for military spending, and since 1980 by slashing taxes on the higher wealth brackets, which have become the largest backers of political campaigns. One could say that instead of taxing the rich as formerly in accordance with the philosophy of progressive taxation, the government now borrows from them and pays them interest.

Most of the growth in America's public debt since the nation went off gold in 1971 has not been financed by U.S. savers, but by foreign central banks, which find themselves flooded with dollars thrown off by America's foreign military spending and widening trade deficit. The problem is that after central banks agreed in 1971 to stop settling balance-of-payments deficits in gold, the only alternative seemed to be to keep their central-bank reserves in the form of loans to the U.S. Government, recycling their balance-of-payments surpluses by buying U.S. Treasury bonds. America's foreign debt has soared far beyond its ability to pay in any foreseeable future, even if its politicians were willing to do so (which they are not).

One result is that despite the fact that most Asian and European voters oppose the U.S. invasion of Iraq and related global military buildup, the international financial system has been set up in a way that obliges foreign governments to finance it. In fact, the United States is running up about $50 billion in interest charges each year to countries such as China – and simply adds this amount to the bill it owes.

This is how Brazil and other Latin American governments operated in the financial sphere before the Third World "debt bomb" exploded in 1982 when Mexico teetered on the brink of default. Each year they would ask the international bank consortium to lend enough more to cover the interest falling due – in effect, to add the interest onto the loan balance. Their debts grew at compound interest, doubling and redoubling exponentially every ten to twelve years at the then-normal annual interest rate of 6 to 7 percent. In effect, banks were paying interest to themselves, using Third World debtors as vehicles in what was becoming an increasingly fictitious global economy. It was fictitious because there was no way that the debts really could be paid. They had grown beyond the point where this was feasible economically, to say nothing of politically.

For governments less powerful than the United States, the price of getting the world's commercial banks to keep rolling over their loans was to submit to strict political conditions laid down by U.S. diplomats. To qualify as a "good client," third world debtors had to pursue deflationary monetary policies laid down by the International Monetary Fund and trade-dependency policies dictated by the World Bank. These programs made their trade balance worse and worse, thereby preventing them from working out their debts in practice. This made the global economy increasingly polarized and unstable.

Lending to these countries resumed after 1990 to debtor governments that agreed to obey creditor demands that they pay their debts by selling off their public enterprises and national infrastructure. These sales led to much higher prices charged for basic services, impairing their competitiveness and hence making a future international debt crisis inevitable once again.

After governments, the leading borrowers are real estate investors. They have followed the same strategy as Third World governments, and bankers have been equally facilitating. Speculators keep ahead of the game as long as property prices increase at a higher rate than the rate of interest charged by the banker, so that they can sell their asset at a capital gain. The idea is to use "other peoples' money" – or more accurately, bank credit – which is created electronically rather than representing savings that people have built up.

Bankers succumb to a bubble mentality, going so far as to make "negative mortgages" – debts that are not paid off at all, but keep adding the accrual of interest to the debt burden. Investors buy real estate and other assets by taking out loans so large that the revenue their collateral generates does not even suffice to carry the interest charges, not to mention paying down the principal. But real estate has become so important to their bankers that when their rental income fails to pay the interest charges falling due, most bankers are willing to be patient and simply let the debt service

mount up. The interest that falls due is simply borrowed – in effect, added onto the debt in an exponentially rising curve.

The hope of lenders and borrowers alike is that the latter can sell their homes or office buildings at a high enough price to cover the mortgage charges and still keep a "capital gain" (mainly the land's site value beneath these properties) for themselves. Well-meaning academics and journalists with the usual array of prestigious credentials are hired to explain that all this adds to "capital formation" and "wealth creation," and hence should be taxed at only half the rate at which earned income – wages and profits – is taxed. This tax favoritism for debt-financed speculation shifts the fiscal burden onto labor and industry.

But real estate prices may plunge when the debt overhead grows too large, leaving property owners with negative equity. Many simply walk away from their property, leaving the banks holding the bag – a portfolio of bad debts. This may leave banks with negative equity if they owe more to their depositors and other creditors (other banks, the government's central banks, holders of their own bonds and commercial paper) than their portfolio of loans is worth.

This was the point at which Citibank and Chase Manhattan were said to be in back in the credit crunch of 1980. They saved themselves by explaining to financial officials (mainly their own former managers) that their failure would cause such widespread dislocations that it would bring down the economy, if not the government currently in office. They were deemed "too big to fail," and were allowed to rebuild their asset base and capital reserves by holding the interest rates that they charged for consumer loans high – around 20 percent – throughout the 1980s and into the 1990s, even as normal interest rates plunged to 5 percent.

For the economy at large – for businesses and individuals lacking the economic clout to keep the banks letting their interest arrears mount up – most borrowers are dependent on the banking system's own expansionist ambitions. The result is a confluence of interest that makes the entire economy look like a Ponzi scheme. The largest banks for their part claim that they are "too big to fail," much as the U.S. Government has told foreign central banks and other dollar holders. The greatest need for such operations is enough new members to put in enough new money to pay investors who want to "cash out" and realize the return that has been promised. In this case the bankers play the role of demanding money – by stopping the practice of lending borrowers the credit to pay their interest charges.

"Ponzi borrowers" need their assets to rise steadily in price so as to keep refinancing their debts at high enough levels to cover the interest that accumulates. This exponential growth becomes more

and more difficult to achieve. Defaults occur if assets fail to appreciate or begin to lose value. This leaves investors in such schemes – and ultimately, banks themselves – holding the bag. That is what occurred in Japan after 1990, and in the United States in 2007. It is the third and final stage of credit flaming out. And as F. Scott Fitzgerald put it, flaming youth ends when there is no more money to burn.

Asset-price inflation as official policy

The largest economic sector is real estate, and it remains the key to any economy's long-term dynamics. The U.S. real estate bubble of the late 1990s and early 2000s illustrates a repertory of tactics employed by the central bank to inflate asset prices. Three tactics are classic: (1) lowering interest rates; (2) stretching out debt maturities; (3) reducing the amount of money ("equity") that asset buyers must put down. As Alan Greenspan recommended, homeowners borrowed against the rising market price of their real estate to maintain consumption levels that their earnings no longer were sustaining.

The political and fiscal dimension of financialization

As the financial sector becomes richer, it translates its economic power into political power, backing lawmakers who shift taxes off property and finance onto labor and industry, depressing the domestic market. Indeed, financialization requires the economic process to be increasingly politicized in order to keep evolving. Recognizing that the growth of debt entails tightening bankruptcy laws independent from democratic oversight and control, and indeed actively militates against it, the financial sector's political lobbies and their academic cheerleaders demand that central banks be made independent from democratic political overrides.

Junk Economics to endorse the Bubble Economy

I almost hesitate to use the term "parasitized" in an academic analysis, but biology provides a repertory of how the financial sector works to take over the economy's policy-making. I use the term "parasitic finance" to explain how the financialization process intellectualizes itself. The strategy of parasites in nature is not simply to drain their host's nourishment for themselves, but to take over its brain – its "planning function," so to speak – so that the host imagines that it is feeding itself while actually it is nourishing and protecting its free rider.

Financialization transforms economic thought itself, including the economy's statistical self-portrait. The classical 19th-century economists would have viewed it as an unproductive distortion of the "real" economy of industry, agriculture and commerce. Such a value judgment needs to be changed ("modernized") in order for financialization to promote the idea of asset-price inflation as "wealth creation" for the population at large to make them willing and even eager to go deeper into debt in the belief that this is the easiest path to wealth, conceived as a positive net worth of inflated asset valuations relative to debt. But the financial sector's rake-off is described as "providing a service," not as a zero-sum transfer payment.

The intellectual bubble that has burst

The bursting of America's financial bubble not only wiped out much financial capital and savings, it also extinguished much of the pseudo-academic Junk Economics that rationalized the bubble economy's asset-price inflation as "wealth creation." Behind the overvaluation of property lay a belief that inflating prices for real estate and corporate stocks added as much to the wealth of nations as creating new fixed capital. What had been welcomed as a postindustrial economy turned out to be the kind of rentier economy that classical economists and Progressive Era reformers had tried to replace with a market free of the kind of "wealth formation" that the Federal Reserve sponsored for more than two decades. After Mr. Greenspan he left the Federal Reserve Board in 2006, his two-term tenure as cheerleader for encouraging irrational exuberance in the real estate market was seen to have built up fictitious wealth – paper valuations which collapse after 2006, leaving intact the debts that had been run up. His reputation as "maestro" turned to that of Bubblemeister. How could economists and government officials ever have believed that the exponential growth of debt and asset prices could go on without constraint? If it is true that "a trend that can't go on forever, won't," then what were the factors that bring such trends to an end?

For one thing, a rising debt means more income devoted to interest, amortization and other financial charges, not a demand for goods and services. And the higher property prices and stock prices were inflated, the more debt homeowners and corporate raiders had to take on to acquire these assets. One of the problems suffered by Ponzi debtors is that they no longer can afford to keep up their living standards. Market demand shrinks, constraining corporate profits. Price/earnings ratios rise even further, lowering the yield of dividends accordingly. This means that it costs more and more to purchase a retirement income – and part of the Greenspan financialization process was to pay Social Security (and health insurance) out of the income stream projected

for prior savings. Higher capital gains meant lower yields of interest and dividends. The bubble economy thus had internal contradictions over and above the behavioral tendency for stability and good times to breed an overly optimistic financial instability.

One form of tortured logic was the idea of reversing the early Internal Revenue Service practice of taxing capital gains as normal income, on the ground that it increases the recipient's balance sheet in the same way as earning income and saving it. John Stuart Mill expressed the classical idea of taxing the rise in land prices on the ground that it was an "unearned increment." Post-classical thought tried to construe these gains as being earned – e.g., by "waiting" – yet simultaneously argued that they were really income at all and hence should not be taxed. Failure to tax such asset-price gains leads investors to speculate rather than to invest productively.

Another victim was the misnamed neoclassical school of thought – misnamed because it actually set out to replace classical political economy's definition of cost-value in terms of the technologically necessary costs of production. Post-classical price theory adopted a pragmatic accountants'-eye view that focused on whatever out-of-pocket expenses were incurred by current buyers and operators of enterprises, even when these were loaded down with debts, exorbitant executive salaries and stock options, high rates of dividend payouts at the hands of "shareholder activists" (the new euphemism for corporate raiders), inflated property prices and patent fees – the institutional property and financial overhead that classical economists had termed economic rent. The distinction between cost-value and market price that formed the core of classical economics was lost.

The most blatant misnomer was "neoliberalism." Classical liberalism sought to free markets from rentier claims for unearned income – land rent, monopoly rent and financial overhead. To neoliberals, a free market was one "free" of government regulation – a market where predatory finance and extortionate monopoly pricing had a free hand to engage in zero-sum exploitation of the economy at large. For pension and Social Security funding, new taxes and other rules are needed to force "savers" to contribute, however unwillingly. This was the kind of forced saving that the democracies of the 1930s had criticized when it was practiced only by Nazi Germany and Stalinist Russia.

The public domain and its natural monopolies were being privatized on credit. This raised the price of basic infrastructure services, without necessarily increasing their quality or supply – and often doing just the opposite. So the philosophy of privatization – and the ideology that economies did not need government – became another victim of the bubble economy. The concept of a mixed economy with mutual checks and balances, with the government providing basic infrastructure

at cost to minimize the economy's price structure while taxing away economic rent and the "free lunch" was lost. Neoclassical and neoliberal economics denied that there was any such thing as a free lunch – although that was what the post-industrial economy's wealth-seeking was all about. Instead of the industrial economy that economic futurists around the turn of the 20th century had anticipated, a neo-rentier economy emerged. It was driven not by what the classical economists called productive loans – those that provided borrowers with the means to earn the revenue to pay off the loan with its interest charges, and still keep normal profit for themselves by creating new means of production – but increasingly by predatory credit, above all by loans extended simply to enable buyers to bid up prices for assets already in place.

Betraying the concept of economic liberty and free markets

A rising proportion of debts cannot be paid, including government debt (especially foreign debt), real estate speculation, corporate takeover debts and many personal debts. The economy's shape changes as debtors default, creditors foreclose and governments are forced to privatize the public domain as an alternative to defaulting or repudiating their debts outright. All this is called a "free market," as if the only form of economic freedom is from government.

It would better be viewed as a free lunch for the financial and property sector. It is a travesty of the historical idea of liberty from the third millennium BC through classical antiquity, when the meaning of liberty connoted primarily freedom from debt bondage. This is the liberty to which early Judaism and Christianity referred. It survives in the inscription on America's Liberty Bell in Philadelphia from Leviticus 25: "Proclaim liberty throughout the land, and to all the inhabitants thereof." The Hebrew word corresponding to "liberty" in this inscription was d'r'r (deror), cognate to Babylonian andurarum, the word rulers used for Clean Slates. These royal proclamations comprised three interrelated policies: cancellation of personal debts, freedom for bondservants who were pledged to creditors as collateral to return home to their families of origin, and return to their customary holders of land and crop rights that had been pledged to creditors as collateral. Viewed in this long-term perspective, financial freedom for government means the right to infringe on the liberty of debtors and indeed, entire debtor economies.

A post-industrial leisure economy – or debt peonage?

The U.S. economy's fate threatens to go far beyond a "Minsky moment" in which markets crash to wipe out the overhang of speculative debt. Creditor interests have turned their economic power

into political power and shift taxes onto labor and industry, off the financial sector and its major customers (real estate and monopolies), even as the economy leaves the stage of asset-price inflation and enters the negative-equity stage in which the debts attached to much property, many companies, financial intermediaries and money management firms exceed the post-inflationary market price of the assets collateralized ("financialized") by this debt.

The reverberations of financialization radiate outward from the U.S. financial sector to the fiscal system (the Treasury's tax policy, cutting taxes on finance and on property income pledged to pay interest overhead), global diplomacy (suspension of the balance-of-payments constraint on the central bank's ability to cut interest rates), economic theory, and the statistics which reflect the categories of economic theory.

Appendix

Neoliberal "free market" canon	Classical liberal canon
If left alone, markets settle at a fair equilibrium in which all parties have equal opportunity.	Economies tend to polarize unless governments act to prevent free lunches by vested interests.
The MV=PT formula views money as being spent on goods and services, and hence sees more money as inflating consumer prices.	Most credit is created for spending on real estate, stocks and bonds. Hence, what is inflated are primarily asset prices.
Analyzes the "real" economy as if it operates on the basis of barter without the buildup of interest-bearing and property-rent claims.	Emphasizes the distinction between the "real" economy's S-curve expansion path and the exponential growth of debt.
Credit is invested productively, enabling borrowers to repay loans and interest.	Most bank credit is unproductive, imposing a debt burden that diverts income away from buying goods and services.
Borrowers use the loan proceeds to make enough money to pay off their loans and keep a profit for themselves.	Under a regime of asset-price inflation, loans are paid off increasingly out of new borrowing against collateral that is rising in price.
Bank lending increases investment to hire labor to produce more goods and services, supplying more output and keeping commodity prices down while raising living standards.	Mortgage credit which is used to bid up real estate prices, or financial credit to bid up prices for bonds and stocks. In the ends, loans are paid off mainly out of capital gains (asset-price inflation).
High debt leverage increases the return on equity, spurring more wealth creation.	High debt leverage increases the debt overhead, and inflates asset prices, obliging property buyers to go deeper into debt.

"Supply-side" economists claim that loans spur more investment, and hence more profits to tax.

Cutting taxes on property income and capital gains lowers the cost of doing business and hence frees more income for investment.

Low wages make economies more competitive, assuming that there is no feedback between wages and productivity.

Loans reduce tax revenues, because interest is a tax-deductible expense. This shifts the fiscal burden onto labor.

Tax cuts free income to be pledged to creditors for higher loans to buy real estate, financial securities and entire companies. This raises asset prices.

High productivity requires high wages and living standards.

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