

BINARY ECONOMICS

<http://www.binaryeconomics.net/wordpress/introduction/definition/>

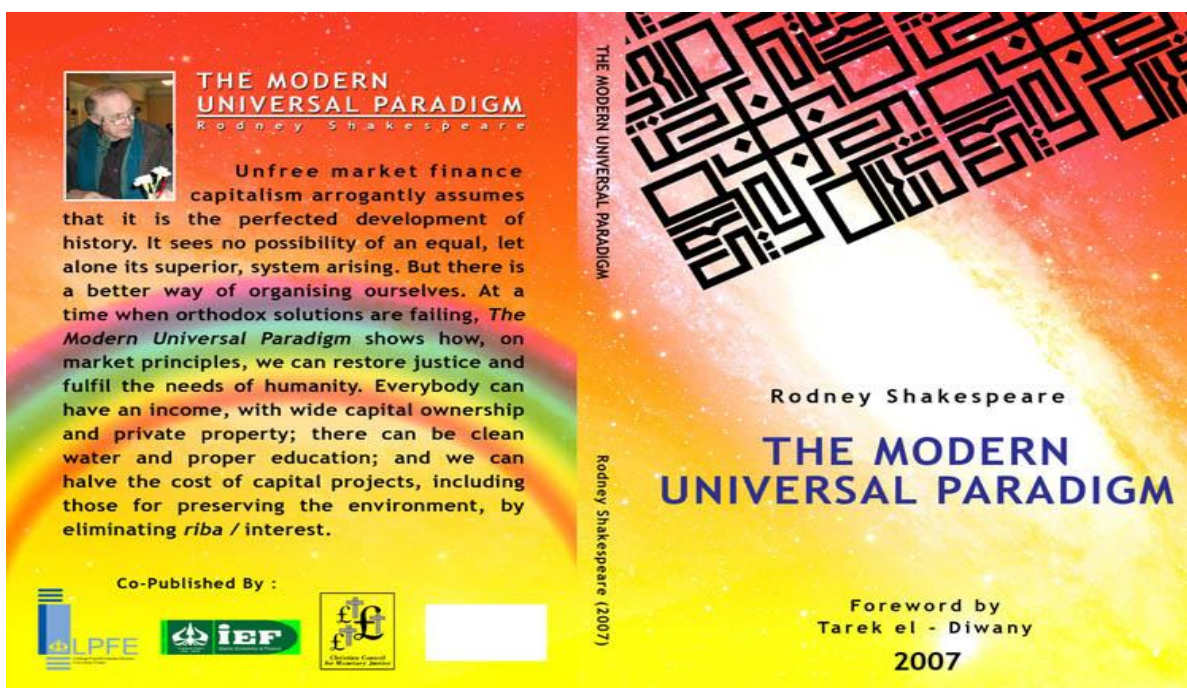
Introduction

WARNING: Binary economics promotes new thinking to benefit all individuals, economies and societies. It has nothing to do with 'investment opportunities' and the like purporting to make use of interest-free loans in some way. Such 'opportunities' are only too likely to be Ponzi schemes and scams.

In this section:

[Definition of Binary Economics](#)

Definition



ON THIS PAGE: [Definition](#) • [Meaning of 'binary' as in 'Binary Economics'](#) • [Binary Basic Income](#) • [Technical Summary of Binary Economics](#) • [Summary of Binary Economics](#) • [Footnotes](#)
[Definition](#)

Binary Economics is the expression of a new universal paradigm or new understanding of reality that creates a new economics, a new politics, a new justice and a new morality.[1] Implementing John Rawls' property-owning democracy, it also addresses the big

environmental issues (e.g., by enabling tidal lagoons and deep-water turbines to give clean, cheap energy generation). Moreover, it is very relevant to resolving the consequences of globalisation and the technological shift which smash out traditional, secure, well-paid jobs and then substitute the insecure, low-paid, temporary, part-time, zero hours contract jobs of the 'gig economy'. As a result, there has developed a heavily indebted 'precariat' (Guy Standing).

Forwarding economic democracy as well as political democracy, binary economics ensures that, over time, **all** individuals come to have ownership of, and access to, efficient productive capacity and the benefits thereof. In this way it makes certain that **every** individual has a genuine income. Thus, for example, those who, unpaid, today care for others, will have income. Moreover, by decisively spreading economic power widely to individuals, it is the only possible **long-lasting bulwark against authoritarian and fascist regimes**.

Binary economics is profoundly co-operative and community-minded; it promotes wide ownership and the economical building of public and environmental projects. It is property-owning democracy put into practice.

Rather than *homo economicus*, the basic principles of binary economics are *homo reciprocans* and *homo co-operans*.

Without the new modern universal paradigm — which is relevant to all societies including modern Islam — there will be no peace, nor an end to colonialism and racism.

Meaning of 'Binary' as in 'Binary Economics'

'Binary' means 'composed of two' — there are two factors in wealth creation (labour and capital) and so two ways by which people may genuinely earn a living (via a job and/or via capital ownership).

People generally think that all, or most, wealth creation is done by humans. However, ever since the start of the Industrial Revolution, *wealth has been more and more created by capital instruments* (e.g., machines, technologies, patents, buildings —

anything which is non-human, capable of providing an income and which is not necessarily owned by everybody).

Sometimes, of course, humans do a large part, even all, of the wealth creation but, today, the capital instruments do most (and sometimes all) of the creation as in automated processes and factories which are continually smashing out the old, steady jobs and substituting insecure, temporary, low-paid ones.



Binary economics, however, understanding what really *does* do the creation of wealth, ensures that, over time, EVERY person comes to have an independent capital holding (producing a good, steady income) which is **in addition to, and separate from**, any income they may, or may not, get from their labour.

Binary Basic Income

Crucially, therefore, binary economics provides a Basic Income but one which is different from other forms of Basic Income in that binary interest-free financing actually develops the productive side of an economy in an efficient way while, at the same time, spreading widely to individuals the results of the production thereby ensuring *a genuine balancing of supply and demand*.

As a result, the binary Basic Income (**unlike other forms of Basic Income**) comes from a *genuine improvement and strengthening of the economy* linked with a widespread distribution of the resulting income.

Technical Summary of Binary Economics

1. Commercial banks to lend (at interest), as they wish, *only their own money* and, with permission, that of depositors. The commercial banks (via a rise to 100% banking reserves) are not allowed to create new money.

NB. This creates a limited pool of money enabling reasonable interest rates to be paid to depositors. Overall, over time, binary economics eliminates interest from most of the productive economy but is unable to do so in the area where the private sector (and that includes Islamic Finance) demands interest.

NB. Today, the banks create 95% of the money they lend out of nothing by simply pressing computer buttons. Interest and administration cost are added and the money is then NOT lent for the spreading of productive capacity to *everybody* in society — instead, it goes into rising asset prices and putting everybody into debt.

2. Central (or National or European) Bank interest-free loan money is issued **for the spreading of wide-ownership productive capacity** (and thus the associated consuming capacity), over time, to every person in society.

This is using society's money supply for everybody's benefit and is counter-inflationary because new, efficient widespread productive (and consuming) capacity comes into existence while the money which created it *is repaid and cancelled*. NB. Growing inequality happens because most people are denied access to productive capital.



Social housing

The interest-free loan money also enables central and local government to build public capital, social housing and environmental projects at one half or one third of the existing cost.

3. The Central Bank interest-free loan money is administered by the commercial banks taking account of:-

- collateral (or a substitute for collateral)
- ability to repay
- whether or not the investment widely spreads economic ownership.

For this lending the banks are allowed to make a reasonable administration charge.

4. The Central Bank need only make a periodic check on commercial banks to ensure that the interest-free loan supply is being used specifically for the spreading of efficient productive capacity. Any commercial bank abusing the privilege of administering the interest-free loan supply (for the benefit of everybody in society) will lose that privilege.

A detailed diagram of the main binary mechanism can be found on the **Implementation** page. *See separate page.*

Summary of Binary Economics

In its economics aspect, binary economics is a market economics whose markets work for everybody. Furthermore, it upholds private property but private property (and the associated income) for everybody, not just the few.[2] This is the implementation of John Rawls' property-owning democracy and a summary is:- ***'a justice which creates efficiency and an efficiency which creates justice.'***

An alternative summary is:- ***'the use of national bank-issued interest-free loans, administered by the banking system, for the development and spreading of various forms of productive (and the associated consuming) capacity thereby creating a balance of supply and demand with producers and consumers being the same people (as required by Say's Theorem) and forwarding social and economic justice.'***

No subsidy is involved. Existing money (e.g., a bank's capital or, with permission, the deposits of customers) may be lent in ways including interest. **However, newly-created money MUST be lent interest-free for developing and spreading the real economy to (and ensuring proper housing for) every individual in the population.**

In its intent to involve people in ownership and participation, binary economics has affinity with Distributism; with John Rawls' *Theory of Justice*; with James Meade's *Efficiency, Equality and the Ownership of Property*; with the worker co-operatives of the Emilia-Romagna region of Italy and the Mondragón Cooperative Corporation of Spain; and with the work of Gar Alperovitz, The Democracy Collaborative, the Centre for Local Economic Strategies and others.

Footnotes

1. Robert Ashford & Rodney Shakespeare (1999) *Binary Economics – the new paradigm*.
2. Norman Kurland, Dawn Brohawn & Michael Greaney (2004) *Capital Homesteading for Every Citizen: A Just Free Market Solution for Saving Social Security*.

<http://www.binaryeconomics.net/wordpress/introduction/History/>

Next page: **History**

History

ON THIS PAGE: [Background](#) • [Binary Economics is Outside both Left-wing and Right-wing Paradigms](#) • [More Ground-breaking Books](#) • [Implementation of Say's Theorem \(Law\)](#) • [Meaning of 'Binary'](#) • [Employee Stock Ownership Plans \(ESOPs\)](#) • [BUT Today's ESOPs are NOT True Binary ESOPs](#) • [Other Binary Plans](#) • [Footnotes](#)

Background: Although elements of binary economics can be found elsewhere (e.g., Pope Leo XIII's *Rerum Novarum* 1891; the Distributism of G.K. Chesterton and Hilaire Belloc; Harold Moulton (1935) *The Formation of Capital*; and **Ibn Ashur (1946) *Maqasid al Shari'ah al Islamiya***,[\[18\]](#) the first clear formulation of the subject was in 1958.



Louis Kelso



Mortimer Adler

This was done by **Louis Kelso** (lawyer and economist, 1913-1991) and **Mortimer Adler** (the American Aristotelian philosopher, 1902-2001) in their unhappily titled, but momentous, book ***The Capitalist Manifesto*** (1958)[19] which can be downloaded from www.kelsoinstitute.org The book's title is a Cold War nomenclature in opposition to communism,[20] but the book's thinking can only be truly understood as being outside all left-wing and right-wing economics and politics — which is demonstrated by the attacks which were made.[21]

NOTE Binary Economics is Outside both Left-wing and Right-wing Paradigms

Thus, on the left, Soviet *Pravda* saw the book as “ramblings based on thinking along a dead end of history”[21] —



which was an egregious misstatement because communism was soon to collapse and binary economics is today increasingly seen as the most modern economics of all.



Meanwhile, ~~Above on the right~~, Milton Friedman was nonplussed and could only conclude that binary economics must be “Marxism stood on its head”.[\[22\]](#)

Very obviously, the extreme left saw binary economics as extreme right; and extreme right saw it as extreme left.

And equally obviously, the puzzlement and confusion of Pravda and Friedman only served to confirm that **binary economics is outside both left-wing and right-wing paradigms, and cannot be comprehended from within those two paradigms.**[\[23\]](#)

More Ground-breaking Books



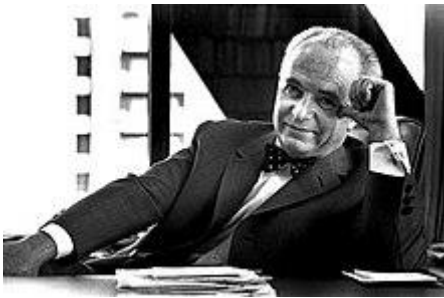
Kelso and Adler[\[24\]](#) (and, later, *Patricia Hetter Kelso*) were to continue to write ground-breaking books[\[25\]](#) explaining how capital instruments provide an increasing percentage of the wealth and, crucially, how and why capital is narrowly owned in the modern industrial economy.

Their analysis then has an important consequence easily understood by market theorists — *if what increasingly produces a larger percentage of the wealth (productive capital) is narrowly owned, then a properly balanced economy (implementing Say’s Theorem (Law) that producers and consumers must be the same people) cannot come into being unless, on true free market and private property principles, productive capital becomes much more widely owned.*[\[26\]](#) This is at the

heart of the binary claim to create an efficiency which creates justice and vice versa.[\[27\]](#)

In the UK in 1976 Rodney Shakespeare and Wilf Proudfoot wrote ***The Two-Factor Nation***.

Implementation of Say's Theorem (Law)



Louis O. Kelso above left (with Patricia Hetter Kelso above p11): Kelso and Hetter gave practical form to their thinking and proposed new binary share-holdings which (with exception for research, maintenance and depreciation) would pay out their full capital earnings, be capable of being insured and, if loss occurred, would occasion no recourse to the new binary owners.

N.B. Because of the full pay-out provision the binary holdings might well pay out *more than five to nine times* what is typically paid out today.[\[28\]](#)

Thus what was being proposed was a new widespread capital ownership and associated individual incomes which can be possessed by *anybody* in the population *irrespective of whether or not that person is in a conventional job or not*.[\[29\]](#) The practical result would be a balancing of supply and demand — ***with producers and consumers being the same people and supply and demand balancing each other*** — as required by Say's Theorem (Law).

(The usual phrase is 'Say's Law'. But a scientific Law is something which results from the observation of reality. Today, however, supply and demand do not balance each other. Thus Say's Theorem is a statement of the ideal situation but it cannot be a Law because balance is not what happens in practice.)

Meaning of ‘Binary’

The word ‘binary’ (in ‘binary economics’) sometimes perplexes people. It means ‘composed of two’ because it suffices to view the factors in production as being but two (labor and capital) and thus there are only two ways of genuinely earning a living — by labor and/or by the ownership of productive capital.[30] In viewing the two factors it can also be observed that humans own their own labor but they do *not* necessarily own the other factor — capital.[31] There is much helpful information at www.kelsoinstitute.org from which the text of *The New Capitalists* (Kelso & Adler, 1961) can be downloaded.

Employee Stock Ownership Plans (ESOPs)

Very often the first acquaintance people have with binary economics comes through today’s **Employee Stock Ownership Plans (ESOPs)**. These stem from Louis Kelso & Patricia Hetter Kelso (1967) *Two-Factor Theory: The Economics of Reality*; the founding of Kelso & Company in 1970; and then from conversations in the early 1970s between Louis Kelso, Norman Kurland (Center for Economic and Social Justice), Jeff Gates (author of *The Ownership Solution*), Dr Shann Turnbull of Australia, Senator Russell Long of Louisiana (Chairman, USA Senate Finance Committee, 1966 – 1981) and *Senator Mike Gravel (left) of Alaska*.



Wide ownership in industry

Although estimates vary, there may be about 7,000 ESOPs in the USA today covering up to 20,000,000 employees. As binary economics predicts, studies have shown efficiency improvements as an effect of

employee ownership and involvement — binary techniques for this are called Justice Based Management. The legal entity which acts for the employees and oversees the capital acquisition and distribution of profits, is the ESOP trust.

BUT today's ESOPs are *NOT* true binary ESOPs

Unfortunately, today's ESOPs are not true binary ESOPs. The true binary ESOP works not only for employees but also for non-employees as well (particularly in highly capitalized industries). Thus it can go much wider than employee ownership and so become a capital credit device which institutionalizes the basic ***binary property right:-***

- for *all* individuals to acquire productive capital
- to pay for the capital out of its pre-tax earnings
- to have the capital insured
- to receive full payout of earnings
- to have the use of interest-free loan money to finance the capital administered by the banking system (which may charge only a reasonable administration cost).[32]

Today, unfortunately, the above five aspects of the binary property right are missing from ESOPs because the original binary concept has been implemented for the purposes of the old paradigm rather than the new binary one.

As a result, present ESOPs, whilst having virtue, are nowhere near capable of fulfilling the true binary purpose of being a mechanism potentially capable, over time, of enabling anybody in society (woman, man, child) to become the holder of a substantial capital estate. In particular, they do not have the use of interest-free loans from the national bank and so are good intentioned, but weak.

Rather similarly, the commendable Cleveland Model is unable to fulfill its true purpose unless it has access to national bank interest-free loans. It is good to try, for example, to keep local spending local but the pervasive use of interest sucks wealth away from local people to the ultra-rich 1%.

Other Binary Plans

It should be noted that the ESOP is only one of several techniques — e.g., **Individual Share Ownership Plan**, **Consumer Share Ownership Plan**,^[33] **General Share Ownership Plan**, **Mutual Share Ownership Plan**^[34] — which can be used to broaden capital ownership but all the techniques have at their heart the use of central bank-issued interest-free loans for the creation and spreading of productive capacity.^[35]

Without those loans the primary defect in the present ESOP legislation will remain in that it **requires poor and working people to acquire capital primarily with the present earnings of labor rather than primarily with the future earnings of capital.**^[36]

History of the idea

Footnotes

18.

19. Louis Kelso & Mortimer Adler (1958) *The Capitalist Manifesto*.

20. Louis Kelso & Mortimer Adler (1958) op. cit.

21. Robert Ashford & Rodney Shakespeare (1999) op. cit.

22. *Time* magazine, June 29, 1970.

23. Robert Ashford & Rodney Shakespeare (1999) op. cit.

24. Louis Kelso & Mortimer Adler (1961) *The New Capitalists*.

25. Louis Kelso & Patricia Hetter (1967) *Two-Factor Theory*.

Louis Kelso & Patricia Hetter Kelso (1986 & 1991) *Democracy and Economic Power – Extending the ESOP Revolution through Binary Economics*.

26. Norman Kurland (1972/2002) *A New Look at Prices and Money – The Kelsonian Binary Model for Achieving Rapid Growth Without Inflation*.

27. Norman Kurland, Dawn Brohawn & Michael Greaney (2004) op. cit.

Louis Kelso & Patricia Hetter (1967) op. cit.

Louis Kelso & Patricia Hetter Kelso (1986 & 1991) op. cit.

28. Louis Kelso & Patricia Hetter Kelso (1986 & 1991) op. cit.

29. Louis Kelso & Patricia Hetter (1967) op. cit.

Robert Ashford & Rodney Shakespeare (1999) op. cit.

Norman Kurland, Dawn Brohawn & Michael Greaney (2004) op. cit.

30. Louis Kelso & Patricia Hetter Kelso (1986 & 1991) op. cit.

31. Robert Ashford & Rodney Shakespeare (1999) op. cit.

32. Louis Kelso & Patricia Hetter Kelso (1986 & 1991) op. cit.

33. Jerry Gauche, *General Stock Ownership Corporations: Another Step in Broadening Capital Ownership* (30 American University Review, 1981).

Jerry Gauche *Binary Modes for the Privatisation of Public Assets* (The Journal of Socio-Economics. Vol. 27, 1998).

34. Louis Kelso & Patricia Hetter Kelso (1986 & 1991) op. cit.

35. Louis Kelso & Patricia Hetter Kelso (1986 & 1991) op. cit.

36. Robert Ashford & Rodney Shakespeare (1999) op. cit.

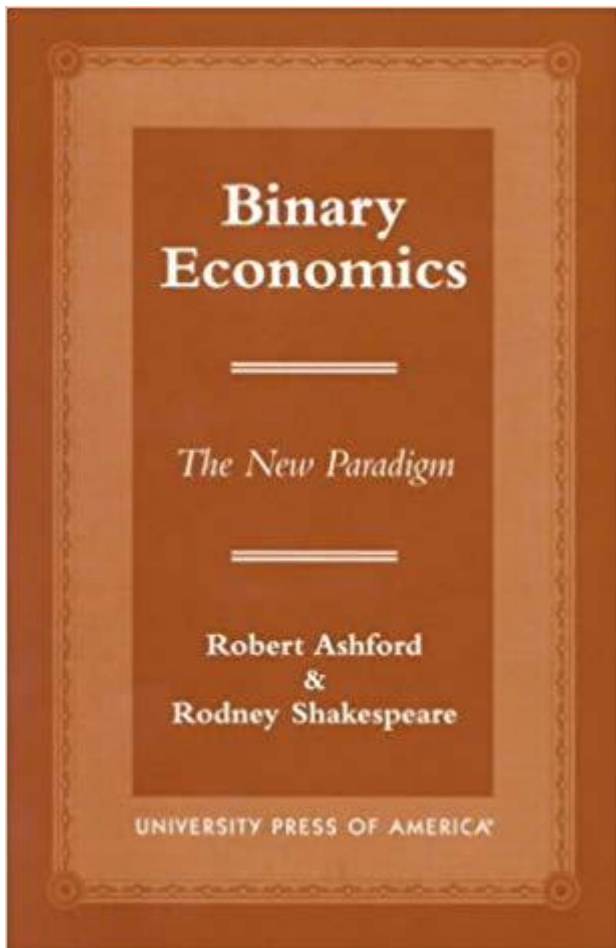
Present

<http://www.binaryeconomics.net/wordpress/introduction/present/>

Present

ON THIS PAGE: [Key Books](#) • [Developments](#) • [Main Differences between American and UK Binary Economics](#) • [The Most Universal Economics with the Most Efficiency and Justice](#) • [Existing Social Security Systems to Remain in Place](#) • [Iraq Plan, Palestine Plan, The Abraham Federation, Kashmir Plan and Alaska Permanent Fund](#) • [International Money Supply and Real Economy Conferences](#) • [Visual Summary of Binary Economics](#) • [Footnotes](#)

Key Books: Over the last few years binary economics has been developing[37] and, in particular, making universal its appeal so that its essence is more easily understood around the world.[38] The key books in this development are:-



- * Robert Ashford & Rodney Shakespeare (1999) *Binary Economics – the new paradigm*
- * Rodney Shakespeare & Peter Challen (2002) *Seven Steps to Justice*
- * Norman Kurland, Dawn Brohawn & Michael Greaney (2004) *Capital Homesteading for Every Citizen: A Just Free Market Solution for Saving Social Security*
- * Rodney Shakespeare (2007) *The Modern Universal Paradigm*

Developments

Apart from the above books, major papers have been presented at important international conferences focusing on money supply and the

real economy (see below).

Furthermore, acknowledgement is made of the individual contributions coming via internet discussion between binary economists. Harold Channer, America's longest serving television interviewer, is particularly thanked for many relevant television programs.

Main Differences between American and UK Binary Economics

American and UK binary economics have developed differently. In summary, the main differences now are:-

* **Whereas** the proposed uses of **national bank-issued interest-free loans** had been limited or under-developed, **in the UK** they now cover **all** the economy *as long as* the spreading of productive capacity is involved.[39]

* **Whereas public capital** (e.g., low-cost public housing, bridges, hospitals, sewage works) was neglected, **in the UK** it is now a principal subject.[40]



This is a matter of huge significance because it means that public capital projects can be built for half, even a quarter, of the present cost. Therefore many more public projects are affordable (or the existing number can be built at half the cost). A major consequence is a diminution of the National Debt.



Trisakti University, Jakarta, Indonesia



* **Whereas** it was recommended binary policy that children should have sufficient income to pay for their own education, in the UK account is now taken of more immediate reality in that **education for children should be free while older students should have interest-free loans.**

There are two co-operating factors in production — productive capital and human labour. Both factors must be properly developed and thus the importance of education. Moreover, education also has great intrinsic value.



* **Whereas** interest-free loans for homes were relatively neglected (but are dealt with in the Kelso book *Democracy and Economic Power*, 1986 and 1991), in the UK such loans are now major binary policy.

N.B. There should not be 125% loans for homes as happens at present (maybe 80% is more appropriate and only two to three times earnings). Deliberate false valuations, like false

declarations of income, SHOULD BE SUBJECT TO CRIMINAL PENALTY.



Women at a village pond in Matlab, Bangladesh, washing utensils and vegetables. The woman on the right is putting a sari filter onto a water-collecting pot (or kalash) to filter water for drinking.

*** Whereas micro-credit was not part of binary economics, in the UK it now is — the poorest people of the world must be given a chance to stand on their own two feet and not have money-lenders battenning onto them. Micro-credit ensures that, through training, mutual support and financial help, poor people who previously had nothing become independent producers who really have something.**



La Rance, France, tidal barrage power plant

*** Whereas environmental capital projects and clean electricity generation were neglected, in the UK they are now major subjects.**

There is no hope for achieving the large-scale projects the world immediately needs (e.g., tidal lagoons/barrages, solar electricity generation, clean water projects) without the use of national bank-issued interest-free loans. At present, the technology exists, but the funding does not.

*** Whereas the ability of the banking system to create money was noted but not substantially opposed, in the UK it is now proposed to gradually raise banking reserves to 100% so that the banking system will not be able to continually create new money. It will of course, be able to use its own capital and, with permission, the deposits of customers.**

*** And whereas the first emphasis was on capital ownership, in the UK it is now on the supply of national bank-issued interest-free loans for the spreading of productive capacity which can take many different forms.[\[41\]](#)**

N.B. The emphasis on the interest-free loan supply is especially important for Islam[42] — see interview with Sofyan Harahap (Professor of Economics, Trisakti University, Jakarta, Indonesia) www.youtube.com. See also The American Muslim at The American Muslim particularly articles by Dr. Robert D. Crane.

The Most Universal Economics with the Most Efficiency and Justice

Rodney Shakespeare says that, most important of all, binary economics is now seen to be by far the most universal economics with the most efficiency and the most justice so that it falls naturally within the global justice movement — see www.globaljusticemovement.net and www.globaljusticemovement.org — and, at the same time, it is an economics which corresponds deeply with core aspects of religious belief. It can thus be taken up by any society and by any faith and, in so doing, they may call it their own.[43]

One World For example, binary economics has a concept of unicity embracing all aspects of life.[44] This resonates with Muslims (*Tawhid*);[45] Christians (*Kingdom (or Kin-dom) of God*);[46] Hindus, Buddhists, Jains and Sikhs (*Dharma*); and Jews (*Shalom*). Bodies like the Christian Council for Monetary Justice (www.ccmj.org) and the Washington D.C. Center for Economic and Social Justice (www.cesj.org) maintain the inter-faith aspects.Many Faiths

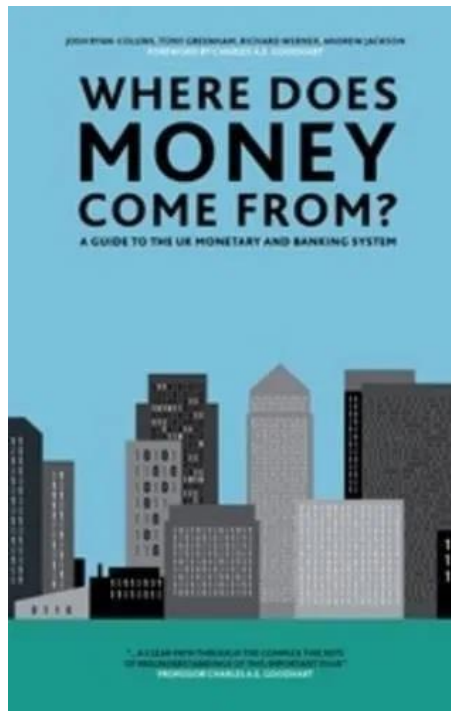
Furthermore, binary economics now confidently embraces major elements from the present and the past.[47]

Past..... From the past come:-

- * a prohibition of *riba* (interest)
- * a strong ethical sense
- * a sense of stewardship
- * a demand for structural social and economic justice (as opposed to mere palliative charity).

.....Present

From the present come key insights including:-



* money today is created out of nothing as debt on which *riba*/interest is imposed

* *riba*/interest — as distinct from administrative and any other essential cost — is not merely wrong and debilitating of the economy and society but *is not necessary*

* the *technological capacity exists to eliminate poverty*. Therefore continuing poverty is the fault of human institutions and practices rather than of any inadequacy of equipment or expertise.

Binary economics says that past and present then come together to create a new economics, a new politics, a new social morality, a solution to the major problems of the environment and a deepening of democracy. On the latter point, the political vote is far from enough. In a world where 25,000 people die each day from the effects of unclean water, [\[48\]](#) a deepening of democracy requires not only the vote but also *the proper provision of clean water, health services, housing, education and also some form of income for all individuals, including babies.* [\[49\]](#)

Other consequences of binary economics include an end to economic colonialism, a diminution of the national debt, an improvement in the position of women, and policy to unite

differing groups. [\[50\]](#) Both national and individual sovereignty are upheld.

Existing Social Security Systems to Remain in Place

Binary incomes and prosperity develop over time but, before they do so, existing social security and health systems will remain in place.

Iraq Plan, Palestine Plan (the Abraham Federation — www.cesj.org), Kashmir Plan and Alaska Permanent Fund

Binary technique is fertile with possibility and an example is the Iraq Plan proposal of the Washington D.C. Center for Economic and Social Justice which would use a combination of interest-free loans and future earnings to transfer ownership and control of Iraq's oil resources to all individual Iraqi citizens. Each citizen, as a right of citizenship, would receive a personal lifetime non-transferable dividend-generating equity share in the national oil company.

By giving each individual a big economic stake in the future of a country, stability and unity can be encouraged. (www.cesj.org)

Other binary Plans exist for Palestine and Kashmir.

The Alaska Permanent Fund takes the annual income from the Alaskan oil pipe line and distributes it directly as income to each individual Alaskan citizen – somewhere between \$900 and \$1800 per year (in 2005 dollars). In the 2009 campaign for the Presidency of Iran candidate Mehdi Karroubi proposed an income (equal shares of stock) for everybody from Iran's oil fields.

NB. Binary economics opposed the 2003 invasion of Iraq before the invasion took place on the ground that a rip-off of Iraqi assets to foreign ownership was intended. The USA's Bremer Orders and endeavour to control Iraqi oil subsequently vindicated the binary position.

International Money Supply and Real Economy Conferences

The Conferences are:-

*** International Islamic University, Kuala Lumpur, Malaysia, August, 2002**

*** The Trisakti University, Jakarta, Indonesia, January, 2004**

*** International Islamic University, Chittagong, Bangladesh, December, 2004**

*** McGill University, Montreal, Canada, September, 2005**

*** Asian University of Bangladesh, Dhaka, Bangladesh, December, 2005**

*** Harvard University, USA, April, 2006**

*** The Trisakti University, Jakarta, Indonesia, December, 2006**

*** International Islamic University, Kuala Lumpur, Malaysia, November, 2010**

*** The Trisakti University, Jakarta, Indonesia, January, 2011**

Visual Summary of Binary Economics

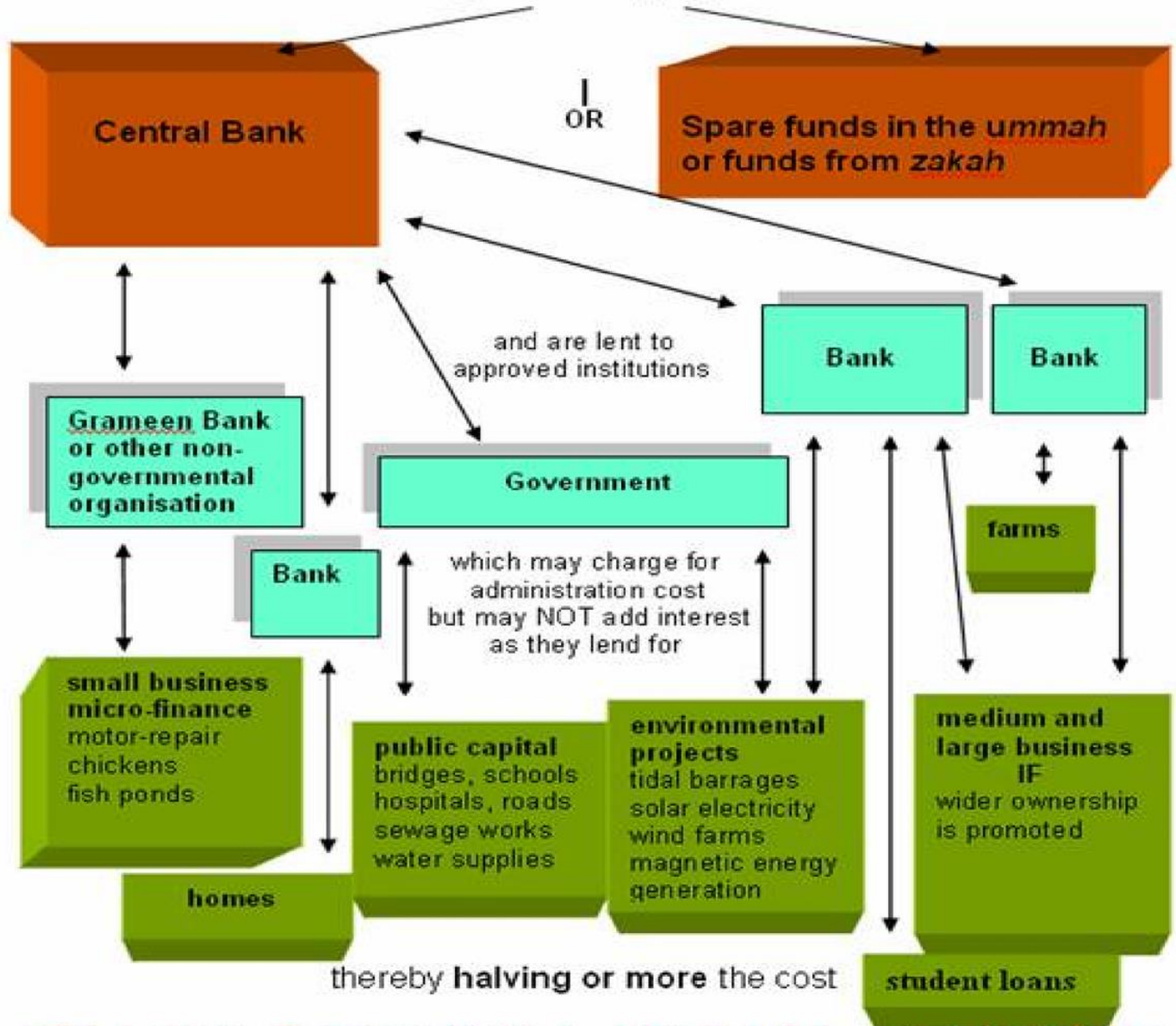
Below is a visual summary of the main aspects of binary economics which can be used to provide a gentle but powerful solution to the global financial and environmental crisis. It will prove helpful to study the diagram for a few minutes.

NB. The banking system is gradually stopped (by a gradual rise to 100% banking reserves) from continually creating money out of nothing. Instead it lends its own capital and (with permission) the deposits of customer, and such lending may be at interest. As the banking system's money creation is stopped, a supply of national bank-issued interest-free loans (administered by the banking system) is opened up with the supply being directed at the development and spreading of productive (and the associated consuming) capacity. In effect, there will be two interest rates – a zero rate for binary purposes (plus administration cost) and the other for the rest of the economy.

Please also notice that, by using the banking reserves mechanism, the national bank has a macro tool in addition to that of interest rates to control the total volume of money in the economy.

A gradual rise to 100% banking reserves requirement stops the banking system from creating money out of nothing

Interest-free loans for productive purposes then come from

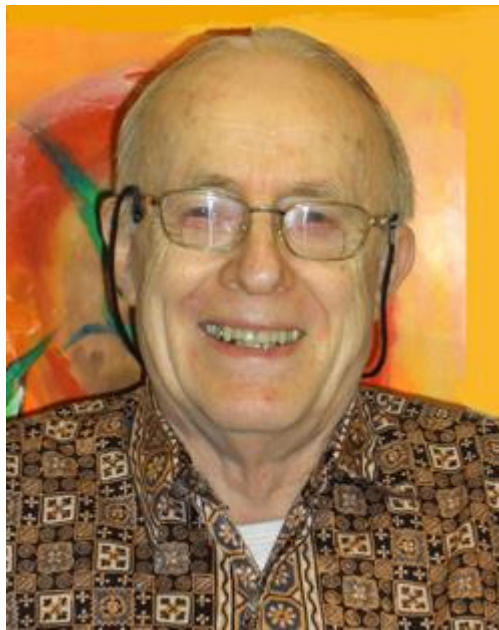


Binary Economics spreads ownership

Footnotes

37. Robert Ashford & Rodney Shakespeare (1999) op. cit.
Norman Kurland (2001) *Saving Social Security* at www.cesj.org.
Rodney Shakespeare & Peter Challen (2002) op. cit.
Norman Kurland, Dawn Brohawn & Michael Greaney (2004) op. cit.
Rodney Shakespeare (2007) op. cit.
38. Rodney Shakespeare & Peter Challen (2002) op. cit.
Rodney Shakespeare (2007) op. cit.
39. Rodney Shakespeare (2007) op. cit.
40. Rodney Shakespeare (2007) op. cit.
41. Shann Turnbull (1975/2000) *Democratising the Wealth of Nations*.
Shann Turnbull (2001) *The Use of Central Banks to Spread Ownership*.
Jeff Gates (1999) *The Ownership Solution*.
Jeff Gates (2000) *Democracy At Risk*.
42. Rodney Shakespeare *Integrating Islamic Finance into the Mainstream* paper presented at Harvard University conference on Islamic Finance, April, 2006.
Rodney Shakespeare (2007) op. cit.
43. Rodney Shakespeare (2007) op. cit.
44. Rodney Shakespeare (2007) op. cit.
- 45.
46. Rodney Shakespeare & Peter Challen (2002) op. cit.
47. Rodney Shakespeare (2007) op. cit.
48. Rodney Shakespeare & Peter Challen (2002) op. cit.
49. Rodney Shakespeare (2007) op. cit.
50. Rodney Shakespeare (2007) op. cit.

Next page: Rodney Shakespeare The Author



Author: Rodney Shakespeare

Rodney was Visiting Professor of Binary Economics at Trisakti University, Jakarta where he taught on the international postgraduate Islamic Economics and Finance program. As a completely new paradigm, binary economics could not be understood (and thus taught) in the UK.

Rodney is a Cambridge MA, a qualified UK Barrister, and a well-known paper presenter and lecturer particularly at conferences dealing with money, the real economy, and social and economic justice. He is a co-founder of the Global Justice Movement www.globaljusticemovement.net and the author of www.binaryeconomics.net. In 2000 he received the (Martin Luther) King-Kelso Award. He broadcasts with various TV and radio stations.

Rodney's first book on binary economics ***The Two-factor Nation*** was published in 1976. He is co-author (with Robert Ashford) of the standard textbook on binary economics ***Binary Economics — the new paradigm (1999)***.

Rodney is co-author (with Canon Peter Challen) of the subsequent text *Seven Steps to Justice* (2002) which further develops binary

economics, and is also author of *The Modern Universal Paradigm* (July, 2007) containing later developments in particular relating to paradigmatic understanding and the appeal of binary economics to people of faith and of good faith.

He is Chair of the Committee Against Torture in Bahrain.

<http://www.binaryeconomics.net/wordpress/rationale/global-crisis/>

Global Crisis

ON THIS PAGE: **Global Crisis — Causes and Solution • The Biggest Factor in the Financial Crisis • The Creation of Money takes place Primarily in Banks • The purported 'Free Market' is not Free, Fair or Efficient • The Fifty Nine False Assumptions of Mainstream Neoclassical Economics • Environmental Crisis • Solution to Financial and Environmental Crisis • The Only Way to Break the Grip of Interest-bearing Money • International Financial Institutions**

Global Crisis — Causes and Solution:

Continuing instability is the manifestation of a global financial system (called 'unfree market finance capitalism', or just 'finance capitalism') which is fundamentally flawed and about to collapse. The flaws ensure that the system cannot:-

- avoid economic cycles
- avoid the build-up of the cycles into bigger ones
- avoid huge build-ups of debt
- prevent rich-poor division
- solve global poverty
- solve the technological shift smashing out jobs
- provide social and economic justice
- address the major problems of the environment



The Biggest Factor in the Financial Crisis

The biggest factor in the crisis is what conventional economics claims is the secret of the 'free market's' purported success, namely, *conventional so-called 'endogenous' loan money*.

The Creation and Destruction of Money

- Banks create money by making loans
 - This money is created out of nothing
 - This money is new money in the form of additional demand deposits
- Money is destroyed when a loan is repaid
 - When a loan is repaid, demand deposit accounts go down
 - This money disappears back into nothing
 - The interest that was paid does not disappear
- The Federal Reserve can affect the bank's ability to create money by increasing or decreasing the bank's reserve requirements

THEREFORE THIS LOAN MONEY:-

* is (1) created out of nothing (by the pressing of computer buttons) by and within the private banking system.

* (2) has interest (as *distinct from* genuine administration cost) added.

* (3) is not directed at

the development and spreading of productive capacity (together with the associated purchasing capacity) so as to achieve a Say's Theorem (Law) balance of supply and demand (with producers and consumers being the same people) while, at the same time, forwarding social and economic justice.

In short, finance capitalism concerns itself with the making of money out of money and NOT with the true productive and democratic purposes of the real economy and society.

Which Is Why The Creation of Money Takes Place Primarily in Banks

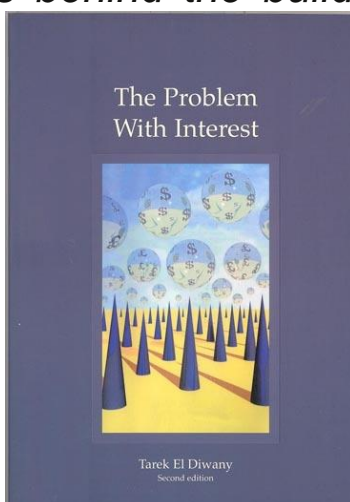
Contrary to popular belief and continual propaganda, banks do **not** lend their own money or that of the depositors. Instead, lent credit is **new** money which is created out of nothing (by the mere pressing of

computer buttons) and, on repayment, the principal of the loan is cancelled.

'The actual process of money creation takes place primarily in banks.' (Federal Reserve Bank of Chicago (1992), *Modern Money Mechanics — a Workbook on Bank Reserves and Deposit Expansion.*)

In the UK around 97% of the new money supply is created in this way and there are similar figures for other countries including the USA.

However, when the banking system creates the loan money out of nothing it creates sufficient money for the principal to be repaid *but no money is created for the repayment of the interest*. Therefore, if the overall money supply is not to shrink, *more and more interest-bearing debt must be created*. The result is that *there is a continuing pressure for more and more interest-bearing debt to be created and that is the fundamental mechanism which lies behind the build-up of individual,*



town, corporation and national debt.

Conventional economics claims that the system of interest-bearing money serves the needs of the economy by efficiently allocating resources. **But this is not true** — the banking system money does *not* allocate its interest-bearing money to new productive capacity and its spreading. **Instead, it allocates it to derivatives; to the bidding up of existing asset prices (such as house prices); to consumer credit; to putting individuals, companies and societies into ever-deeper debt, indeed, to anything but the real, productive economy.**

Moreover, the paying of interest diminishes the capacity of borrowers to repay and diminishes their capacity to consume.

In addition, conventional endogenous money requires **two** lots of financing (one for production and one for consumption when only one lot — for both production and consumption at the same time — is necessary). *The result is that there is continued inflation.*

Because it has detrimental effects and does not serve the purposes of a true, fair, free market, let alone the purposes of society, conventional 'endogenous' loan money must be gradually eliminated. This can be done by a gradual rise in banking reserves eventually to 100%. Banks will then be left with the duties of lending (as they are supposed to do) their own capital and (with permission) the deposits of their customers; and of administering interest-free loans stemming from the national bank.

The purported 'Free Market' is not Free, Fair or Efficient

All of the factors contributing to the crisis take place against a background of deceitful propaganda and deception about the 'free market'. The truth is that the 'free market' is *not* free, *not* fair and *not* efficient and there cannot be true democracy unless *all* individuals (whether or not in conventional jobs) have their own independent productive capacity giving them their own income.

Furthermore, throughout the world, capital ownership is concentrated — in some 'free market' countries only a handful of families own most of the stock market (e.g., in Indonesia fifteen families own around 60% of the stock market). Over-concentration of economic power and the prevention of the operation of a true free market (in which producers and consumers are the same people) are prime causes of autocracy and poverty.

NB. The justification for the present system of the banking system creating money and lending it at interest is that, by so doing, it is furthering the allocative and justice purposes of an efficient 'free market'. However, in reality, it does **not** allocate resources efficiently and justly and, since interest is also unnecessary where productive capacity is concerned, the whole justification for the present system collapses.

On top of which, the present system (unlike binary economics) is incapable of achieving a proper balance of supply and demand with producers and consumers being the same people as required by Say's Theorem (Law) and the requirements for social and economic justice.

The Fifty Nine False Assumptions of Mainstream Neoclassical Economics

Indeed, mainstream neoclassical economics is fundamentally flawed and that is because it is based on many false assumptions. This is a matter of considerable importance because if only one assumption is false (or, at the most, two or three assumptions are false) then the whole structure of neoclassical economics becomes invalid. **Please visit the page FIFTY NINE FALSE ASSUMPTIONS to see the fifty nine false assumptions of mainstream neoclassical economics.**

Environmental Crisis



Because of the interest which compounds, debtors are under continual pressure to repay and, on the international scene, whole countries are effectively colonised by having to repay amounts many times the original loans. Also, because of interest, much frenetic activity is engendered and poor people without material security cannot be expected to moderate their claims on material prosperity unless they also have a fair deal like everybody else.

But binary economics gives the fair deal because it spreads productive (and the associated consuming) capacity so that all individuals in the population — including babies, carers and those not normally in conventional employment — have at least some form of secure, independent income.

Moreover, at present, virtually everyone has either had a scarring experience of poverty or has a perception or fear that they might fall into poverty. In short, people feel insecure and that is one of the main factors in explaining greed. The insecurity – and the associated aggressive consuming attitudes — will only disappear if ALL people have material security and, at the same time, all people in some degree earn in exactly the same way as do others (i.e. at least part of their individual income should come through capital ownership). Only then will there be hope of people voluntarily minimising their greed. Moreover, as between individual countries, fairness between populations is essential if there is to be willing co-operation.

Greed is also caused by the present financial system which creates sufficient money for the principal of interest-bearing loans to be repaid but does not create sufficient money with which to repay the interest. The result is that more interest-bearing money has to be created (with more inflation and more



people going into debt) and more frenetic activity in the endeavour to try to make repayment. Worse, the system favours the short term destruction of natural wealth rather than its long term maintenance. **Unless the role of interest in the financial system is substantially diminished not only is the environment at risk but so is the stability of the world financial system.**

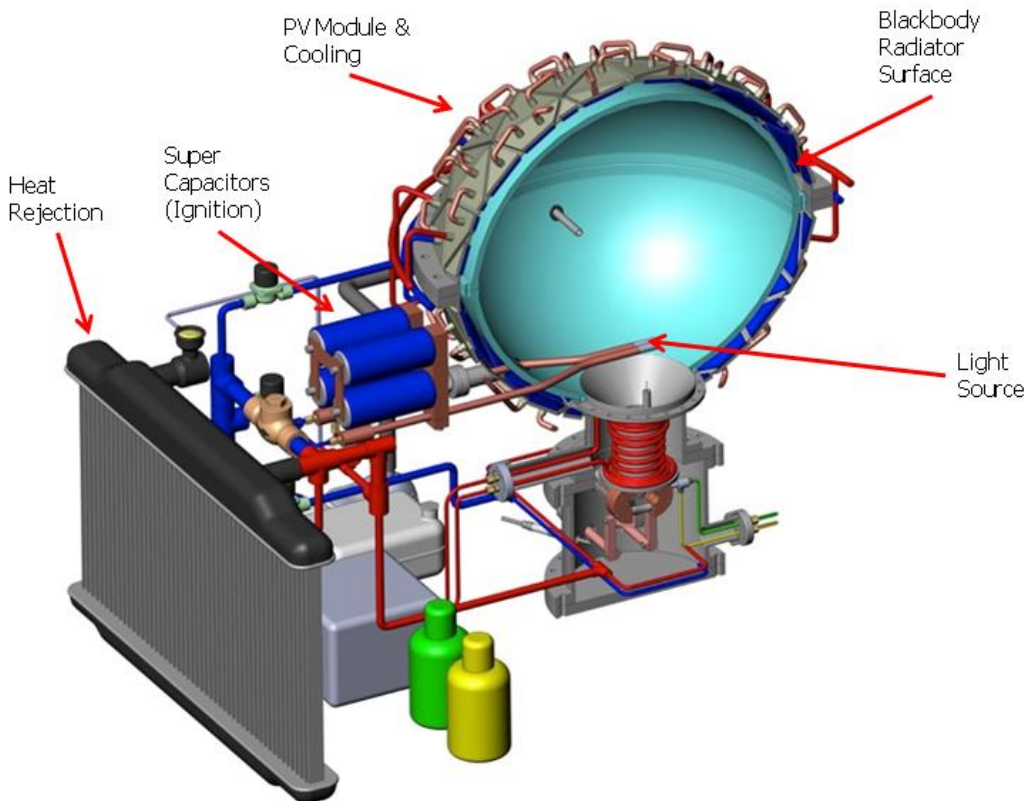
Population Stabilization

* Human population growth is slower than predicted but because of the large and increasing population size the world population is still expected to increase substantially before stabilizing.



It is also the case that populations stabilise when there is a reasonable standard of living, good education and health and at least some status for women. Binary economics provides these things and is essential if the present growth of the world's population is to be moderated.

Brilliant Light Power



Lastly, there is now an extraordinary range of 'alternative' green technologies capable of generating clean electricity but which cannot be used because, in the present system of interest-bearing

money, they are not financially viable. Examples include tidal barrages, tidal lagoons, and large-scale solar structures. However, with interest-free loans they will become viable. The world must have clean electricity generation and that means the use of interest-free loans to introduce the technology.

Solution to Financial and Environmental Crisis

The fundamental cause of the global crisis now manifesting itself in various ways in a banking system which:-

- a) creates money out of nothing (**EX NIHILO**)
- b) adds interest (as distinct from administration cost)
- c) directs it at anything **except** the development and spreading of the ownership of productive (and the associated consuming) capacity so as to achieve a Say's Theorem balance of supply and demand with producers and consumers being the same people while, at the same time, forwarding social and economic justice.

Because only enough money is created for the principal of a debt but not for the interest which must be paid, *more and more interest-bearing debt must be created if the system is not to collapse*. But, as the amount of interest-bearing debt continually rises, not only is the debt hugely increased (with consequent massive systemic instability) but inflation is continuously created.

The instability is compounded by the newly-created money **not** being put into the development and spreading of productive capacity. Thus the USA, putting the interest-bearing money into anything except productive capacity, has in practice hollowed out its economy which, of course, exacerbates the effect of the huge, mind-boggling, debts.

The solution can be summarised as the issue of national bank-issued interest-free loans (administered by the banking system) for the development and spreading of productive (and the associated purchasing) capacity to all individuals in the population. All environmental capital projects, all governmental capital projects, micro-credit, small business, student loans and the private sector (if wide ownership is involved) are covered by the solution.

NB. At the same time as the national bank loans are issued, the banking system must be curtailed in its present ability to create money out of nothing and lend it for any purpose *except* the development and spreading of productive capacity. The curtailment can be done by a rise to 100% banking reserves.

At the core of the solution is the use of interest-free loans issued by the national bank for the purpose of productive capacity. Such loans cannot be inflationary, indeed, they are *counter-inflationary* — when the loans are repaid, they are cancelled leaving behind in the economy productive, income-generating capital assets. Thus productive assets always back the currency.

Crucially, the loans originate with the national bank. By originating the money with the national bank (rather than the banking system) *society's* ownership of the money supply is established and thus the money can be interest-free and focused on the purposes of productive capacity and the real economy so as to achieve a Say's Theorem balance of supply and demand while, at the same time, forwarding social and economic justice.

And so it is proposed that a country's national bank should create interest-free loans. On repayment, the loans (like the principal of normal bank loans) are *cancelled leaving the capital projects in existence*. The money for repayment of loans is collected and repaid as it is at present except that the capital projects would cost, roughly, half, even a quarter or less, of what they cost today.

The collateral for the loan would be similar to that today e.g., either secured on the project itself or on the repaying power of the government and its administrative systems. Essentially, the government would be repaying itself thereby removing creative liquidity which has fulfilled its function.

NB. In the past this mechanism has been successfully used for public capital projects in Canada, New Zealand, China and Guernsey and is believed to be being used in Malaysia today for some big public capital projects. Gradually, over time, the banking system (by an increase in required reserves) would be increasingly restricted in its own creation of money unless such creation demonstrably spreads productive capacity and assists sustainable development.

NB. While the supply of interest-free loans (originating with the national bank) increases, there needs to be, at the same time, a **decrease** in the present ability of the banking system to create money out of nothing. This would be done by, over time, a gradual rise eventually to 100% banking reserves (which effectively ends the ability of the system to create money out of nothing). The banking system would, of course, still be able to lend its own capital and (with permission) the deposits of customers.



The Only Way to Break the Grip of Interest-Bearing Money

Through National Banks

National Banks are the institutions from which the supply of interest-free loan money for productive capacity should originate. Such origin is the only way to break the grip of interest-bearing money.

International Financial Institutions

Present international financial institutions are all in the grip of the old paradigm of interest-bearing money and its inefficient, unjust allocation. Something new is needed but there is the problem that, because the new binary paradigm is not properly understood, any new international financial institution will be manipulated to serve the purposes of the negative forces now bringing the global economy to destruction. Thus the true intent of the New World Order is to put the whole world into debt and so under NWO control.

The *Banco del Sud* has raised seven billion dollars from its member countries so as to avoid dependence on interest-bearing international

money and it proposes lending at low interest-rates to member countries for particular infrastructure projects.

However, the *Banco del Sud* has no money supply of its own; probably does not understand that, where productive capacity is concerned, interest can be avoided; has very limited aims; and, because it is conceptually weak, could very easily be corrupted by the existing paradigm and its practices.

Environment & Population

<http://www.binaryeconomics.net/wordpress/rationale/environment-and-population/>

ON THIS PAGE: [Incomes for All](#) • [Insecurity Causes Greed](#) • [Present Financial System Causes Greed and Destruction](#) • [Stable Population Levels](#) • [Declining Population Levels](#) • [Alternative Technologies](#) • [Other Uses of Interest-free Loans](#) • [Central Bank-issued Interest-free Loans for Environmental Capital and Other Projects](#) • [Footnotes](#)

Incomes for All: Binary economics spreads productive (and the associated consuming) capacity so that *all* individuals in the population — including babies, carers and those not normally in conventional employment — have at least some form of secure, independent income. The income starts small and grows larger over time.^[63] *A secure, reasonable income for **everybody** is essential if there is to be any hope of changing people's attitudes towards excessive consumption.*^[64]



Insecurity Causes Greed

At present virtually everyone has either had a scarring experience of poverty or has a perception or fear that they might fall into poverty. In short, people feel insecure and that is one of the main factors in explaining greed. The insecurity — and the associated aggressive consuming attitudes — will only disappear if, as in binary economics, ALL people have material security and, at the same time, all people in some degree earn in exactly the same way as do others (i.e. at least part of their individual income should come through capital ownership). Only then will there be hope of people voluntarily minimising their greed. Moreover, as between individual countries, fairness between populations is essential if there is to be willing co-operation.

Present financial System Causes Greed and Destruction

Greed is also caused by the present financial system which creates sufficient money for the principal of interest-bearing loans to be repaid but does not create sufficient money with which to repay the interest.[65] The result is that more interest-bearing money has to be created (with more inflation and more people going into debt) and more frenetic activity in the endeavor to try to make repayment.[66]

Worse, the system favors the short term destruction of natural wealth rather than its long term maintenance.[67]

Unless the role of interest in the financial system is substantially diminished (as happens with binary economics) not only is the environment at risk but so is the stability of the world financial system.[68]

Stable Population Levels

It is also the case that populations stabilise when there is a reasonable standard of living, good education, health and at least some status for women. Binary economics provides a reasonable standard of living, good education, health and full and equal status for women particularly by ensuring independent income. Thus binary economics is the only hope for moderating the present growth of the world's population. [69]

Declining Population Levels

However, today, some economies (e.g., Japan, Italy, Korea, Germany) are showing signs of a population decline increasing over the next few decades. This stimulates panic headlines about not having enough workers etc.

But binary economics links everybody to productive capital (which creates the higher percentage of the wealth) and so has no fear of societies with reduced population.

Alternative Technologies

Lastly, there is now an extraordinary range of 'alternative' green technologies capable of generating clean electricity but which cannot be used because, in the present system of interest-bearing money, they are not financially viable.



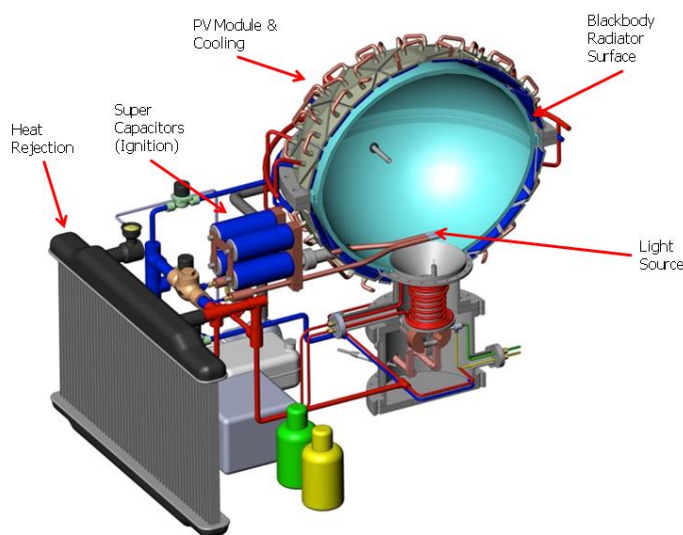
La Rance, France, tidal barrage power plant

Examples include tidal barrages and tidal lagoons; and large-scale solar structures.

There is now also hope that some technologies — at present viewed with varying degrees of skepticism by mainstream science and previously

thought to be physically impossible — are practical. Indeed, there are many ‘alternative’ technologies that, in principle, would be eligible for research and development funding under binary economics.

Some of these technologies, if physically possible, would enable the clean generation of electricity for cars, houses, trains and factories and they can be found among the **Top 100 Technologies** which are a mixture of that which lies within, on the edge of, and outside existing science. An example is the use of magnetic interactions for clean electricity generation which does not require the input of any other energy (i.e. ‘free’ energy generation). Cars, houses, trains, factories could be powered by clean, ‘free’ magnetically-generated electricity.[59] All of these technologies should be implemented with interest-free loans.



Brilliant Light Power

NB. A company — BrilliantLightPower — might be about to produce a powerful new clean electricity technology. Conventional physicists say the BLP method is impossible because it breaks the laws of physics. However, they omit asking the key question — **does the BLP method actually work?**



Other Uses of Interest-free Loans.

With present interest-bearing loan money, the planting of deciduous forests is costly. But it would not be so with interest-free loans.

Moreover, miles of sea barrage can be covered by mangrove forest. With interest-free loans they become viable.^[70]

The 2007 document below succinctly sets out the binary environmental case.

Central Bank-issued Interest-free Loans for Environmental Capital and Other Projects

Challenge addressed

Under the present financial system, adapting to climate change in the developing world (and elsewhere) will cost billions of dollars per year. Thus a new, reliable, effective and non-inflationary financial mechanism is urgently required.

Scope of the proposal

The proposal covers all environmental capital projects, all governmental capital projects, and micro-credit. Moreover, it is capable of being extended to small business, the private sector (if wide ownership is involved), student loans and, crucially, to the development of new alternative technologies particularly for the clean generation of electricity.

Structure of the proposal

The banking system, using the fractional reserve system, today creates money out of nothing, adds compound interest and does not necessarily direct it at the development and spreading of productive (and the associated purchasing) capacity. In the UK and USA over 95% of the new money supply is created in this way.

It is proposed that a country's central bank should create interest-free loans. (Such loans could also come from the IMF, World Bank, individual countries or the Islamic ummah). On repayment, the loans (like the principal of normal bank loans) are cancelled leaving the capital projects in existence.

The money for repayment of loans would be collected and repaid as it is at present except that the capital projects would cost, roughly, half or less what they cost today.

The collateral for the loan would be similar to that today e.g., either secured on the project itself or on the repaying power of the government and its administrative systems. Essentially, the government would be repaying itself thereby removing creative liquidity which has fulfilled its function.

In the past the mechanism has been successfully used for public capital projects in Canada, New Zealand, China and Guernsey and is believed to be being used in Malaysia today for some big public capital projects.

Gradually, over time, the banking system (by an increase in required reserves) would be increasingly restricted in its own creation of money unless such creation demonstrably spreads productive capacity and assists sustainable development.

Estimated value or influence

The proposal in its full form focuses all new money creation (as loans) onto environmental capital and the development and spreading of various forms of productive capital.

Moreover, the proposal is capable of being implemented in lesser developed economies.

Therefore the overall value of the proposal can be described as environment-friendly, financially huge, global-wide, effective and inclusive.

Other matters and key points for discussion

Since the loans are repaid and cancelled and result in an expenditure of half, or less, of the usual cost, there is probably only one substantial question to be addressed — *Why are they not used?*

The answer is that an out-dated understanding of reality and an outdated financial system are wrecking the world and they need to be changed.



Dharma economics • *Tawhidi* economics • Christian economics
Kin-dom of God economics • Humanomics • Faith economics
Islamic economics • Ethical economics • Justice economics
Binary Economics • *Shalom* economics • Indigenous economics

Footnotes

63. Norman Kurland, Dawn Brohawn & Michael Greaney (2004) op. cit.
64. Robert Ashford & Rodney Shakespeare (1999) op. cit.
65. Tarek el-Diwany (2003) *The Problem with Interest*.
66. Tarek el-Diwany (2003) op. cit.

67. Tarek el-Diwany (2003) op. cit.
68. Tarek el-Diwany (2003) op. cit.
69. Robert Ashford & Rodney Shakespeare (1999) op. cit.
70. Rodney Shakespeare (2007) op. cit.

<http://www.binaryeconomics.net/wordpress/mechanisms/incomes-for-all/>

Incomes For All

ON THIS PAGE: [Preamble](#) • [Binary Property Right and the Right to Capital Credit](#) • [The Binary Competence](#) • [Estate Duty](#)

Preamble

In the binary economy all individuals have a proper income. Apart from the usual opportunities offered by labour work, all individuals have an independent income arising from capital ownership (paying out its full return). Mothers with children are therefore able to bring up their own children without financial pressure.



Even small children have an income, sufficient for basic need. (If free education is not available) at the age of five the binary income increases to allow for payment of basic school fees, with increases at eleven and sixteen. Thereafter the income stays with the child (now an

adult) as part of the increasing adult binary *competence* which comes from an independent capital estate.

Binary Property Right and the Right to Capital Credit

The **binary property right** is the right for *all* individuals:-

- to acquire productive capital
- to pay for the capital out of its pre-tax earnings
- to have the capital insured
- to receive full pay-out of earnings
- to have the use of interest-free loan money to finance the capital administered by the banking system (which may charge only a reasonable administration cost).[

The property right is associated with the binary **right to capital credit**.

The Binary Competence

The binary competence is the practical manifestation of the property right. The word *competence* (which can be traced back to Jane Austen, Alexander Pope and William Shakespeare meaning property or means sufficient for the necessities and conveniences of life; sufficiency without excess) is defined as:-

a capital estate large enough to supply sufficient current consumer income to support at least one half of an affluent life style (measured in the context of what society as a whole can efficiently produce).

Figures contained in a 1998 study by Northeast Ohio Employee Ownership Center, Kent State University, Ohio and a 2005 study from the Center for Economic and Social Justice, Washington, D.C., indicate (2005 figures) that, aged sixty five, an adult would have a binary income of about \$26,000 and a capital accumulation of at least \$200,000 with both figures continuing to increase after the age of sixty five.[15]

NOT POVERTY.....BUT WEALTH!!!



Along with the competence, individuals will also be free to gain income from labour as now and, of course, to receive pension or other income.

NB. Scare stories about increasing longevity and actual government actions are causing a rise in the age at which pensions become payable.



However, binary economics is not afraid of the effects of increasing longevity because it is predicated on widespread capital ownership and its productive value rather than the false assumption that labour produces all of the wealth.

Estate Duty

As part of binary policy to develop capital ownership for each member of the population, there is no estate duty (or Inheritance tax) on death **ON CONDITION THAT** the estate devolves in such a way as to spread capital estates to more individuals. If it does not do so, there would be a graduated tax.

Next page: **Loans**

<http://www.binaryeconomics.net/wordpress/mechanisms/loans/>

Loans

ON THIS PAGE: [Uses of Central Bank-issued Interest-free Loans for the Development and Spreading of Productive Capacity](#) • [Public Capital Investment](#) • [Private Capital Investment](#) • [Binary Property Right and Right to Capital Credit](#) • [‘Green’ Environmental Capital Investment](#) • [Cutting-edge Technologies](#) • [Small Business and Micro-finance](#) • [Education — Loans to Older Students](#) • [Homes](#) • [Footnotes](#)

[Uses of Central Bank-issued Interest-free Loans for the Development and Spreading of Productive Capacity](#)

Binary economics proposes that national bank-issued interest-free loans should be administered by the banking system and that, while no interest would be charged, there would be an administrative cost as well as capital credit insurance if necessary.[51]

This supply of interest-free loans for the spreading of productive capacity (and the associated consuming capacity) as well as for environmental and public capital would take place in circumstances of a move (over time, on market principles) to 100% banking reserves. Thus the banking system would not be continually creating money (as happens today) but would be confined to lending (with permission) depositors’ money and the bank’s own capital.[52]

New interest-free (repayable and cancellable) loans would then come from the national bank for productive capacity (and be administered by the commercial banks). *Thus new, efficient productive capacity and widespread consuming power (thereby creating a true balance of supply and demand) will be the backing of the currency.*

The uses of the national bank-issued interest-free loans can be summarized as follows:- Public Capital Investment, Private Capital Investment, Green Environmental Investment, Small Business and Micro-finance, Education and Homes.

Public Capital Investment



Alberta Children's Hospital



Nanpu Bridge in Shanghai

Interest-free loans would allow low-cost public housing, hospitals, social housing, roads, bridges, waterworks, schools etc. to be built for one half, one third, even one quarter of the present cost. (This use is also advocated by the USA Sovereignty movement — Congressman Dennis Kucinich, Ken Bohnsack et al.). However, the capital projects can still, if wished, be built, managed, even owned, by the private

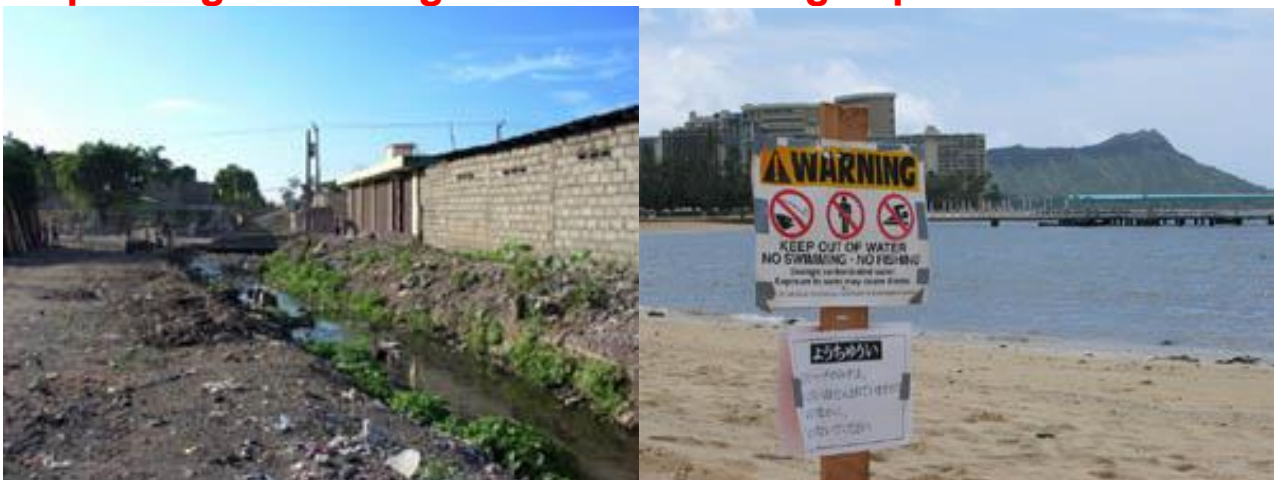
sector and use made of Community Investment Corporations and the like.[53]



With interest-free loans not only would the cost of public capital projects be halved, even quartered, but their financing would not need to be done with interest-bearing money. A major consequence would be a great diminution of the National Debt.

Throughout the world 25,000 people die each day as the result of dirty water.

Outpourings of sewage like this resulting in pollution like this...



Can all be ended by building a sewage works.



Interest-free loans for public capital projects are being used today and have been used in the past. **Such loans have undoubtedly been used by the English Channel Island of Guernsey over the years** but exact information as to the present position is difficult to obtain. However, it can be noted that Guernsey has minimal national debt and low income tax. Today Malaysia is believed to be experimenting with such loans and, of late, has achieved some remarkable feats of construction. **Over the period 1939 – 1974 Canada used the loans** and, today, many Canadian municipalities are again demanding their use. In the USA, 3,400 governmental bodies (local boards, towns, cities etc) and six State governments support the idea – a Bill (HR 1452) reached Congress but was defeated by powerful vested interests.

After 1935 New Zealand used such loans — for hydropower schemes, railways, state housing etc. — and had a remarkably prosperous period to the 1970s when the loans were stopped. People should ask why the example of the New Zealand is not being followed. At an interest rate of only 1%, hydroelectric projects and public housing were financed. **Why not today?**

Furthermore, after 1949 national bank loans were a major factor in the Taiwanese *Land to the Tiller* program which spread land

ownership from the few to the many. This was done without causing inflation and was an overall binary solution because, in various ways the money went into the spreading of both productive and consuming capacity. (One way was by financing the buyout with industrial bonds, thus giving capital to small industries to provide things for the newly empowered farmers to purchase.)[\[54\]](#)

Private Capital Investment



Fractionating columns

Ownership of productive (and the associated consuming) capacity can be spread by binary economics. Interest-free loans should be allowed for private capital investment *IF* such investment creates new owners of capital and is part of national policy to enable all individuals, over time, on market principles, to become owners of substantial amounts of productive, income-producing capital. [\[55\]](#)

The Binary Competence

The object of the widespread capital ownership is to enable *all* individuals to obtain an independent income or **binary competence**. The competence is defined as:- *a capital estate large enough to supply sufficient current consumer income to support at least*

one half of an affluent life style (measured in the context of what society as a whole can efficiently produce).

Binary Property Right and Right to Capital Credit

The binary competence is the practical implementation of the basic **binary property right** — the right for all individuals to acquire capital, to pay for it out of its pre-tax earnings, and then to receive its full payout income. The binary property right cannot be effective without an associated **right to interest-free capital credit**.

Figures contained in a 1998 study by Northeast Ohio Employee Ownership Center, Kent State University, Ohio and a 2005 study from the Center for Economic and Social Justice, Washington, D.C., indicate (2005 figures) that, aged sixty five, an adult would have a binary income of about \$26,000 and a capital accumulation of at least \$200,000 with both figures continuing to increase after the age of sixty five.



Cement works in Norway

By using national bank-issued interest-free loans, a large company/corporation would get cheap money as long as new binary shareholders are created. The key point is that the cost, at the very least, is being halved while, at the same time, the ownership of productive capacity is being spread.[56]

It is proposed that all large corporations should have to pay out all their earnings all the time (with exception of reserves for maintenance, depreciation, repair and research). The large corporations will then have the option of obtaining interest-free loans on condition that they help to spread ownership using the binary trust mechanisms. Medium-

sized corporations will be able to have interest-free loans if they spread ownership.

‘Green’ Environmental Capital Investment

Interest-free loans should be used, in particular, for clean, renewable energy.[57] At present, a lot of green technology projects are not financially viable. With interest-free loans, however, they would become viable. At last we would be able to have clean electricity through tidal barrages, tidal lagoons, wave machines, wind turbines, solar electricity, and geothermal power stations.[58] Time is short. Global warming is accelerating. A crash program of clean energy-generating projects is urgently needed.

La Rance, France, tidal barrage power plant

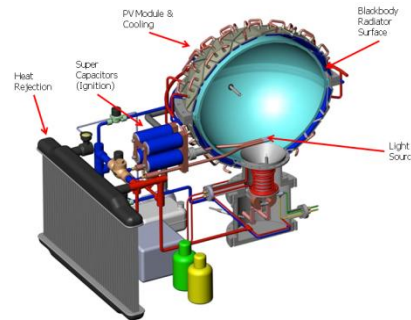


Clean electricity generation projects can be constructed at one half or less of the usual cost. The Rance tidal barrage in France is 330 metres long although similar structures — e.g., tidal lagoons — can be many times larger and can also be built out at sea in shallow coastal waters.

Cutting-edge Technologies

There is now also hope that some technologies – at present viewed with varying degrees of skepticism by mainstream science and previously thought to be physically impossible – are practical. Indeed, there are many ‘alternative’ technologies that, in principle, would be eligible for research and development funding under binary economics.

Some of these technologies, if physically possible, would enable the clean generation of electricity for cars, houses, trains and factories and they can be found among the **Top 100 Technologies** which are a mixture of that which lies within, on the edge of, and outside existing science. An example is the use of magnetic interactions for clean electricity generation which does not require the input of any other energy (i.e. 'free' energy generation). Cars, houses, trains, factories could be powered by clean, 'free' magnetically-generated electricity. [59]



Moreover, ordinary algae, grown in tanks under lightweight structures, could easily solve our energy problems – see **SolaRoof/Mass Algae** and **Solarroof** All of these technologies should be implemented with interest-free loans.

Small Business and Micro-finance



Greenhouse Farm, North Yorkshire, UK Courtesy Mr & Mrs Eddleston

Interest-free loans should be used for micro-finance, small business and farms thereby freeing them from the huge pressure of

compounding interest-bearing debt. Farm capital can be one half or less of the usual cost.

The world's poor people can be enabled to acquire some capital or training by the use of interest-free micro-finance[60] being funnelled through the Grameen Bank and similar institutions such as the **Institute for Integrated Rural Development**.

Women at a village pond in Matlab, Bangladesh, washing utensils and vegetables. The woman on the right is putting a sari filter onto a water-collecting pot (or kalash) to filter water for drinking.



However, today, as in Bangladesh, the micro-finance money bears interest. This is because, increasingly, donor fatigue is resulting in the drying-up of grant money and so micro-finance lending institutions are turning to borrowing from commercial sources at interest. This causes the loans to cost twice as much as they need cost and that has dire consequences for people living on one or two dollars per day. Binary finance to a borrower costs roughly half or less that of conventional finance and it is disgraceful that, quite unnecessarily, the world's poorest people, e.g., Bangladeshi women, have money-lenders battenning onto them.

Education — Loans to Older Students

There are two factors in production — human labour and capital. The labour factor is enhanced by education.



Trisakti University, Jakarta, Indonesia Education should be free, particularly up to the age of sixteen. If, thereafter, education cannot be free, interest-free loans should be available because older students should not be unnecessarily burdened with interest-bearing debt maybe for the rest of their lives.

Homes At present the money supply largely goes into derivatives and existing assets (e.g. the continual inflation of house prices around the world) rather than into the development and spreading of new productive capacity.



It is not the intention in any way to risk adding to the inflation but, certainly when there is 100% banking reserves (and so the banking system cannot create money), the use of interest-free loans for homes will become policy thereby halving at least the present cost.

There should not be 125% loans for homes as happens at present (maybe 80% is more appropriate and only two to three times earnings) and deliberate false valuations, like false declarations of income, should be subject to criminal penalty.

Footnotes

51. Louis Kelso & Mortimer Adler (1961) op. cit.
Norman Kurland (1998) *The Federal Reserve Discount Window* —
www.cesj.org
The capital credit insurance is only necessary when other forms of collateral are not available.
52. Masudul Alam Choudhury op. cit.
Rodney Shakespeare (2007) op. cit.
53. Norman Kurland, Dawn Brohawn & Michael Greaney (2004) op. cit.
54. John Medaille (2007) *The Vocation of Business: Social Justice in the Marketplace*.
55. Norman Kurland, Dawn Brohawn & Michael Greaney (2004) op. cit.
56. Norman Kurland, Dawn Brohawn & Michael Greaney (2004) op. cit.
57. Rodney Shakespeare (2007) op. cit.
58. Rodney Shakespeare (2007) op. cit.
59. Rodney Shakespeare (2007) op. cit.
60. Rodney Shakespeare & Peter Challen (2002) op. cit.
61. Robert Ashford & Rodney Shakespeare (1999) op. cit.

Next page: **Implementation**

Implementation

ON THIS PAGE: [Practical Illustrations of Binary Economics](#) • [Full Pay-out Shares](#) • [The Main Binary Mechanism](#) • [Source of Funding is ultimately Future Earnings](#) • [Binary Economics is Fundamentally Different](#) • [Main Cause of Poverty](#) • [Binary Economics Addresses Weaknesses in the Current Economic System](#) • [Footnotes](#)

Practical Illustrations



Philadelphia Waterworks and Museum. Source: Jeannine Keefer
Binary economics is very practical. An illustration is the interest-free funding for low-cost social housing, a waterworks, bridge, sewage works, road or hospital — the use of national bank-issued interest-free loans *halves, even quarters*, the cost. Every day, globally, 25,000 people die from the effects of dirty water.[\[10\]](#)

Three more illustrations are:-

- * a halving or more of the usual cost of micro-credit for poor people
- * the enabling of *any* individual in the population (from a baby to a retiree) to become a shareholder in one of the great corporations — the shares would be full pay-out ones thereby creating a considerable income for the holder.
- * Interest-free loans for older students.

Full Pay-out Shares

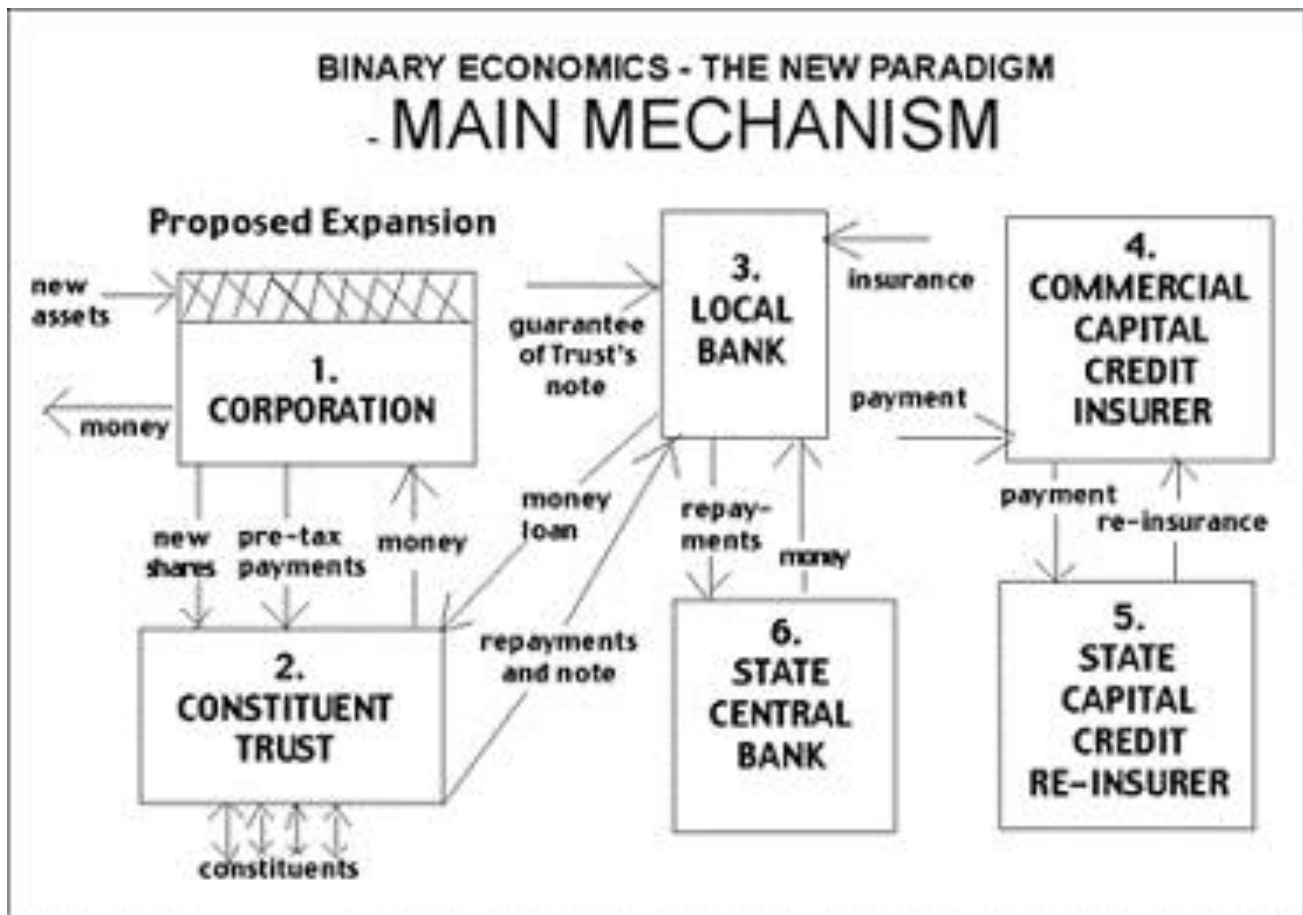
Binary economics defines 'full pay-out' shares as net of reserves for depreciation, research and development.

The earnings of full pay-out shares are expected to be *five to nine times* existing earnings.

One consequence is that in highly capitalised industries a company/corporation would be capable of providing good income not only for employees **but also for non-employees as well.**

The Main Binary Mechanism

Readers may wonder exactly how employees (or, in highly capitalized corporations, non-employees as well) acquire their full pay-out shares and the diagram below shows how this is done:-



The state central (national) bank (6) creates interest-free money and lends it to the local bank (3) which will lend it to the constituent trust (2) IF the main binary principles (wide ownership, ability to repay, collateral or insurance substitute (4) (5) and full pay-out) are forwarded.

The trust lends to the corporation/company in exchange for new full pay-out shares which will vest in the new binary owners (constituents of the trust) in due course. The new binary owners can be employees or non-employees (which, for example, would be the case in a highly-capitalized company/corporation).

However, for a lending to local government (e.g., for a public capital project) the diagram would be simplicity itself — the state central bank just lends interest-free to the local government which repays the money.

Source of Funding is Ultimately Future Earnings

NB *The financial savings of individuals are **not** used as the source for funding the full pay-out shares — the source of the interest-free financing is ultimately the **national bank** and repayment comes out of **future** earnings.*

The national bank is used as the source of the loans for the shares to emphasise that the national money supply is NOT that of a mere private grouping (as is the case with banks today) but is society's money supply *which* (although funnelled through the banking system making an administrative charge) *can be interest-free for the purposes of an efficient, just economy*. Indeed, where the financing of new productive capacity is concerned, *interest is **not** necessary*.

Binary policy results in national bank-issued interest-free loans being available for the purpose of development and spreading productive (and so consuming) capacity to *every* individual in the population thereby enabling producers and consumers to be *the same people* and, at the same time, forwarding social and economic justice.

In practice there would be two rates of interest — **interest-free** (for the binary purposes as above) and **interest-bearing**. Economies should not be reliant on foreign financial capital and so national bank credit should be used with capital controls being available if needed.

Binary Economics is Fundamentally Different

Binary economics is fundamentally different from all forms of conventional economics (be they expressions of right-wing, centrist or left-wing theory).[4] Thus, unlike most mainstream economics, binary economics accommodates belief in God, unicity and ethics.[5] It directly addresses the main environmental issues; does not assume that humans only follow their own immediate short term self interest; ends economic colonialism; appeals to people of faith *and* of good faith;[6] and does not assume that humans (as distinguished from capital instruments) do all, or nearly all, of the physical creation of wealth.[7]

Binary economics is not a “third way” between capitalism and socialism: it expresses a new paradigm . Binary economics cooperates with, and supports, anybody who understands the uses of the national bank-issued interest-free loan supply.

As a study, binary economics is not reductionist,[8] does not ignore the imbalance in power relationships between people,[9] and does not assume that extensive poverty is inevitable. (NB. 55% of the world’s population lives on under \$3 per day: every day an estimated 25,000 people die from the effects of dirty water).[10] Being concerned with social justice and economic justice it also notes that allegedly successful ‘free market’ economies show symptoms of profound failure — thus figures from the 2004 Census show that one fifth of Americans live on under \$7 per day.[11]



Poor Americans

Moreover, this happens in a country which is the richest in the world and which claims to be the embodiment of a perfect, efficient and just 'free market'. Furthermore, America spends over 18% of its national income on health (as compared to 10% in the UK) and with longevity outcomes inferior to those of the UK and France. Forty eight million Americans have to rely on food stamps.

Main Cause of Poverty

Binary economics establishes that **lack of access to productive capital (in various forms) is the main cause of poverty and of structural imbalance in a market economy so that producers and consumers are not the same people with consequent imbalance of supply and demand and a general inability to further social and economic justice.** Moreover the institution of interest (as distinct from administration cost) operates as a giant hoovering operation sucking up wealth from the poor and transferring it to the rich.

It follows that productive capital must become as widely spread as possible. Furthermore, productive public capital (e.g., waterworks, sewage works, roads, bridge, hospitals and housing) must be spread and human capital developed via the provision of education and interest-free loans. All newly-created money must be interest-free and used for the purpose of developing and spreading efficient productive capital to *all* people in the society.

Binary Economics Addresses Weaknesses in the Current Economic System

Binary economics addresses a number of weaknesses in the current economic system which are dismissed by conventional economics as being of no, or low, importance. The weaknesses include:—

* almost all of the modern money supply is in the form of interest-bearing debt created and owned by the banking system. (In the UK over 95% of the money supply is created in this way: there are similar percentages in other countries).^[12]

* the present money supply is generally *not directed at productive (and the associated consuming) capacity* but instead goes into derivatives, rising asset prices, consumer credit and putting everyone —

individuals, towns, corporations, towns, cities, countries — into ever-increasing debt.[13]

* at present **two** lots of financing are required to keep the system going — one lot for production and a *separate* lot for consumption. The two lots are continually inflationary whilst, all the time, more and more loan money must be created (by the banking system) if the whole economic and financial system is not to collapse. Inflation is inevitable with the present system. (NB. Binary financing (which is called ***simulfinancing***) requires only **one** lot of financing and is **counter-inflationary**).

* forms of productive capital remain narrowly owned and there is no policy to spread the ownership of productive (and the associated consuming) capacity throughout the population[14]

* people do not have their own independent incomes



* the practices of the IMF and World Bank which deliberately trap countries into never-ending debt; keep productive capital (and associated consuming power) narrowly owned; and, in an abuse of power, are generally bent on ripping off the wealth of poor countries

* in practice, economic colonialism * in practice, racism

Binary economics redresses those weaknesses. Thus economic colonialism is ended by allowing countries to have control over their own money supply, control over their own assets, and freedom from

international debt. No country should ever borrow foreign currency; instead all countries should always use their own currency. Moreover, opposition to racism has little meaning unless it is manifested in practical, everyday material improvement and binary economics provides this by spreading ownership thereby enabling the spreading of the associated incomes.

Binary economics does not expropriate or take: rather *it enables everybody to build.*

Footnotes

3. Robert Ashford & Rodney Shakespeare (1999) op. cit. John H. Miller ed. (1994) *Curing World Poverty: the New Role of Property*.
There are five Justices at www.globaljusticemovement.net
4. Robert Ashford (1990) *The Binary Economics of Louis Kelso: the Promise of Universal Capitalism* (Rutgers Law Journal, vol. 22 No.1. Fall, 1990).
5. Rodney Shakespeare (2007) *The Modern Universal Paradigm*.
6. Rodney Shakespeare, (2007) op. cit.
7. Robert Ashford (1990) op. cit.
Robert Ashford & Rodney Shakespeare (1999) op. cit.
8. Rodney Shakespeare, (2007) op. cit.
9. Rodney Shakespeare, (2007) op. cit.
10. "Over a fifth of the world's population still live in abject poverty (under \$1 a day), and about one-half live below the barely more generous standard of \$2 a day." *Technical Report of the High-level Panel on Financing for Development* (United Nations, Dec., 2000).
11. William Shanley *Poverty in America: American Dream Now a Nightmare for Millions? One in Five Lives on Less than \$7 per day* Global Research, April 23, 2007 www.globalresearch.ca
12. Rodney Shakespeare & Peter Challen (2002) *Seven Steps to Justice*. Also *Money creation in the modern economy* by Michael McLeay, Amar Radia and Ryland Thomas of the Bank's Monetary Analysis Directorate. *Bank of England Quarterly Bulletin 2014, Q1*.
13. Rodney Shakespeare (2007) op. cit.
14. Norman Kurland, Dawn Brohawn & Michael Greaney (2004) op. cit.
15. Rodney Shakespeare (2007) op. cit.

16. James S. Albus (1976) *Peoples' Capitalism -The Economics of The Robot Revolution*.

17. Louis Kelso & Patricia Hetter Kelso (1986 & 1991) *Democracy and Economic Power – Extending the ESOP Revolution through Binary Economics*.

See also [About the Author](#)

Next page: **The Competence**

<http://www.binaryeconomics.net/wordpress/mechanisms/the-competence/>

The Competence

<http://www.binaryeconomics.net/wordpress/mechanisms/the-competence/>

The Competence

ON THIS PAGE: • [The Competence](#) • [Other Characteristics of Binary Economics](#) • [Overall View](#) • [Binary Economics is Beginning to be Taught in Universities](#) • [Visual Summary of Binary Economics](#) • [Footnotes](#)

The Competence

Indeed, over time, on market principles, binary economics enables **all** individuals to build an independent basic income or *binary competence*. The *competence* (the word can be traced back to Jane Austen, Alexander Pope and William Shakespeare meaning *property or means sufficient for the necessities and conveniences of life; sufficiency without excess*) is defined as:-

a capital estate large enough to supply sufficient current consumer income to support at least one half of an affluent life style (measured in the context of what society as a whole can efficiently produce).

Figures contained in a 1998 study by Northeast Ohio Employee Ownership Center, Kent State University, Ohio and a 2005 study from the Center for Economic and Social Justice, Washington, D.C., indicate (2005 figures) that, aged sixty five, an adult would have a binary income of about \$26,000 and a capital accumulation of at least \$200,000 with both figures continuing to increase after the age of sixty five.^[15] Today those figures would be much higher.

Along with the competence, of course, individuals will also be free to gain income from their labour as now.

As part of binary policy to develop capital ownership for each member of the population there is no estate duty (or Inheritance Tax) on death

ON CONDITION THAT the estate devolves in such a way as to spread capital estates, and therefore capital ownership, to more individuals. If it does not do so, then there is a graduated tax.

Other Characteristics of Binary Economics

Binary economics is of particular importance in a world where, increasingly, more of the physical contribution to production is being done, and will be done, by machines and near-robots.[16]



Automation — bread

With binary economics national debt is lessened and national unity encouraged.

Binary economics creates a stable economy and associated financial system which is not subject to unsustainable booms and resulting crashes.

In binary economics there is no expropriation (as there can be in socialism, for example).

Moreover, because people come to have sufficient income from their own independent capital estates, much less redistribution is necessary (for example, by taxes in order to fund forms of government spending including welfare benefits). Because there is much less redistribution there is much less taxation.

Binary economics cannot be inflationary: it is **counter-inflationary** whilst developing and spreading wealth. A suitable descriptive word might be '**doeflation**'. Nor can it lead to a global financial crisis of the sort now threatening economies and markets.

Binary economics upholds the periodic political vote but *deepens democracy by creating economic democracy*. This is done by ensuring that all individuals have the everyday freedom and control over their lives stemming from an independent economic base.^[17] Without that base, humans can never be truly free.

NB. Binary economics is NOT Modern Monetary Theory, 'Social Credit' or 'Islamic Finance'

Binary economics is **NOT** Modern Monetary Theory (or similar theory e.g., 'Social Credit') which creates ('prints') debt-free (non-repayable) money and does **NOT** put it into the productive economy and its spreading. MMT ends up creating inflation, a maladjusted economy, concentrated capital ownership and loss of real earnings.

Alternatively, when large amounts of interest-bearing money are borrowed and not put into the productive economy and its spreading, the negative consequences are the same.

And binary economics is **NOT** 'Islamic Finance' which pretends to eliminate interest but, by using devious legal contracts, in practice has interest rates greater than most Western finance. Moreover, 'Islamic Finance' does not spread ownership.

Conventional Economics Compared with Binary Economics – [see separate page](#)

Overall View

An overall view is that binary economics results in:-

- * capital ownership for all individuals in the population so that they produce (and thus earn) independently of whether or not they also have a conventional job
- * housing for all people

- * free markets
- * an efficient wealth creation including a balancing of supply and demand
- * structural economic and social justice
- * no inflation
- * proper encouragement of small and start-up businesses
- * sharing and participatory structures
- * a strong ethical sense imbuing everything
- * a general end to riba/interest (but banks may lend *their own* money at interest for non-binary purposes)
- * an end to economic colonialism
- * public and environmental capital projects
- * a direct connection between money and the real economy

There is also:-

- * an increase in political freedoms and a deepening of democracy
- * policy to unite inhabitants who have different linguistic, religious, geographical and ethnic backgrounds

In particular, over time, binary central bank-issued interest-free loans enable a government to refrain from increasing the National Debt and enable the ownership of an economy to



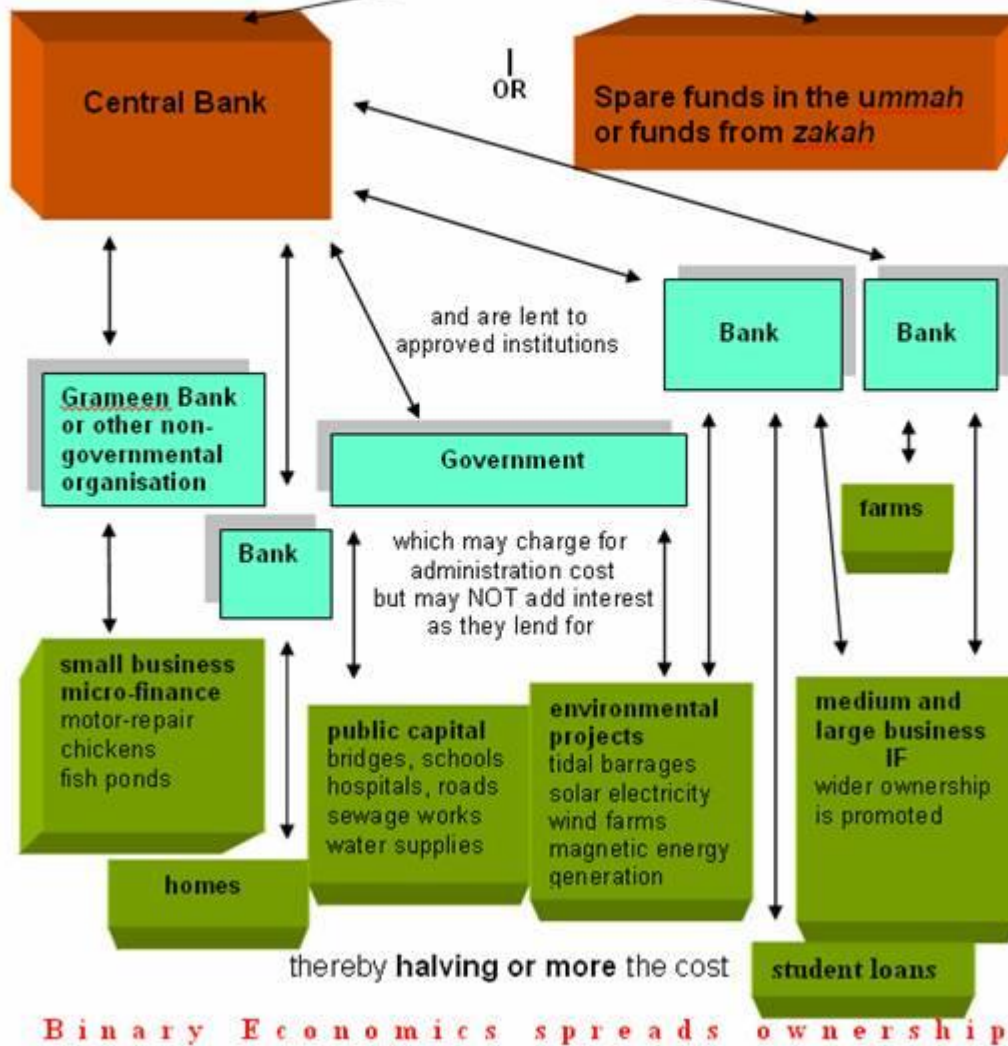
Binary Economics is Beginning to be Taught in Universities. As a completely new paradigm, binary economics could not be understood (and thus taught) in the UK. It therefore had to be taught abroad.

The first such teaching (by Rodney Shakespeare) was on the Islamic Economics and Finance postgraduate program at Trisakti University, Jakarta, Indonesia. Trisakti is famous as the birthplace of the 1998 Indonesian reformasi revolution and contains plaques and memorial recording the student deaths. It is the biggest private university in Indonesia and second only to the main state university in prestige.

Visual Summary of Binary Economics

A gradual rise to 100% banking reserves requirement stops the banking system from creating money out of nothing

Interest-free loans for productive purposes then come from



Footnotes

1. Robert Ashford & Rodney Shakespeare (1999) *Binary Economics – the new paradigm*.
2. Norman Kurland, Dawn Brohawn & Michael Greaney (2004) *Capital Homesteading for Every Citizen: A Just Free Market Solution for Saving Social Security*.
3. Robert Ashford & Rodney Shakespeare (1999) op. cit.

John H. Miller ed. (1994) *Curing World Poverty: the New Role of Property*.

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4. Robert Ashford (1990) *The Binary Economics of Louis Kelso: the Promise of Universal Capitalism* (Rutgers Law Journal, vol. 22 No.1. Fall, 1990).

5. Rodney Shakespeare (2007) *The Modern Universal Paradigm*.

6. Rodney Shakespeare, (2007) op. cit.

7. Robert Ashford (1990) op. cit.

Robert Ashford & Rodney Shakespeare (1999) op. cit.

8. Rodney Shakespeare, (2007) op. cit.

9. Rodney Shakespeare, (2007) op. cit.

10. "Over a fifth of the world's population still live in abject poverty (under \$1 a day), and about one-half live below the barely more generous standard of \$2 a day." *Technical Report of the High-level Panel on Financing for Development* (United Nations, Dec., 2000).

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13. Rodney Shakespeare (2007) op. cit.

14. Norman Kurland, Dawn Brohawn & Michael Greaney (2004) op. cit.

15. Rodney Shakespeare (2007) op. cit.

16. James S. Albus (1976) *Peoples' Capitalism -The Economics of The Robot Revolution*.

17. Louis Kelso & Patricia Hetter Kelso (1986 & 1991) *Democracy and Economic Power – Extending the ESOP Revolution through Binary Economics*.

Next page: **[Fifty Nine False Assumptions of Mainstream Neo-classical Economics](http://www.binaryeconomics.net/wordpress/fundamentals/fifty-nine-false-assumptions-of-mainstream-neo-classical-economics/)**

<http://www.binaryeconomics.net/wordpress/fundamentals/fifty-nine-false-assumptions-of-mainstream-neo-classical-economics/>

Fifty Nine False Assumptions

Fifty Nine False Assumptions of Mainstream Neo-classical Economics

Below are listed fifty nine assumptions which underlie mainstream neo-classical economics. These assumptions are basic things believed to be true or taken for granted as inevitable or sensible, but **which, in fact, are false**.

This is a matter of considerable importance because if only **one** assumption is false (or, at the most, two or three assumptions are false) then ***the whole structure of mainstream neo-classical economics becomes invalid***.

However, Binary Economics becomes easily understood if the fifty nine false assumptions are one by one, and simply, **reversed** (as briefly seen **in the orange text**).



Indeed, after only two or three reversals a whole new world begins to come into view.

NB. Many people say that they “**do not understand economics**”. This **NOT** because they are stupid. It is because conventional economics is full of contradictions and obvious falsities **which make comprehension impossible**.

The false assumptions and obvious falsities of mainstream neo-classical economics are:-

1. Scarcity is an inevitable part of the human condition. **(It is not inevitable).**
2. High taxation is necessary. **(That is false).**
3. Labour physically creates all, or a large part, of the wealth. **(That is false — it creates part. Of all the false assumptions this is among the most pernicious.)**
4. The ‘free market’ is free. **(It is unfree).**
5. The ‘free market’ is efficient and allocates resources efficiently. **(It is inefficient).**
6. The outcomes of the ‘free market’ are always just. **(They are unjust).**
7. *Homo economicus* is an accurate description of human psychology. **(*Homo reciprocans* is better).**
8. Conventional economics is an all-encompassing science of objective process and universal value and further improvement to economics is impossible. **(That is false — further improvement is possible).**
9. It is a matter of small importance that the banking system creates money out of nothing sufficient for the repayment of the principal of a loan but not of the interest. **(It is of huge importance and the implications must be addressed).**
10. The ‘free market’ consists of states of equilibrium: when there is disequilibrium there will always be a return to equilibrium. **(That is plainly false).**
- 11 There Is No Such Thing As a Free Lunch (any improvement for the poor inevitably involves a detriment to the rich). **(That is false — binary economics is not a zero sum game).**
12. The ‘free market’ upholds private property for all. **(It does not).**

13. It does not matter who owns the capital, particularly productive capital. **(It matters hugely).**
14. The 'free market' implements Say's market Theorem (Law) that producers and consumers should be the same people. **(It does not implement the Theorem).**
15. Somebody who voluntarily looks after a sick child or adult does no work in the economic sense. **(Try doing it !)**
16. Interest is inevitable and always necessary. **(Reasonable administration cost is inevitable and necessary: interest is not).**
17. Ethics/morality is not part of economics. **(This is madness).**
18. The poor are poor because of lack of effort and lack of skill (rather than lack of productive capital, lack of access to capital credit and suffering the burden of interest). **(Have a think about this and then you will realise its great untruth).**
19. Inflation is not caused by the banking system. **(Oh yas it is!).**
20. Financial savings are necessary before there can be investment. **(They are not necessary because, today, money is created out of nothing by pressing computer buttons).**
21. Physical savings are necessary before there can be investment. **(This is generally untrue because materials are available. Prices for things can rise but that only increases cost. Also substitutes are often available).**
22. Labour and welfare payment will always suffice. **(They most certainly do not suffice....).**
23. It is not necessary for every person to have an independent income. **(This is completely untrue).**

24. The level of interest rates is all that is necessary to manage an economy properly. **(What matters is who or what creates the wealth and who gets the benefit of the creation).**
25. Wide ownership is not necessary. **(It is absolutely necessary).**
26. Student loans should bear interest. **(Why should such loans bear interest?)**
27. Public capital projects should be funded by borrowing interest-bearing money. **(Interest-free (repayable and cancellable) loans halve, even quarter, the cost).**
28. Micro-credit lending should bear interest. **(Why? Collateral and repayment are required, but why interest?)**
29. Environmental capital projects should bear interest. **(Certainly not).**
30. An economy requires **two** lots of financing — one for production and one for consumption. **(N.B. Only one lot of financing is necessary if it is simulfinancing as in binary economics).**
31. There is no such thing as society. **(Oh please! Why don't mainstream economists grow up?)**
32. Personal debt is healthy for an economy; as also national debt. **(This is codswallop.....Because of the need to repay interest, people in debt have less consuming power than those without debt).**
33. There is no power imbalance between actors (participants, including individuals) in an economy. **(Whoever first thought of this has never lived an ordinary life).**
34. Social and economic justice on the one hand and efficiency on the other are incompatible. **(Wrong! In binary economics the justice and efficiency are compatible and intertwined).**

35. Economic history is irrelevant. **(Really? The trouble with mainstream economists is that they never learn anything).**
36. Outdated economic theory (Adam Smith, 1776, basically conceived **before** the industrial revolution had got under way), suffices to guide modern economic theory and practice. **(The modern analysis of binary economics is badly needed).**
37. The important things in economics are anything **except** the development and spreading of productive capacity so as to make producers and consumers the same people thereby enabling a Say's Theorem (Law) balance of supply and demand and also enabling the forwarding of social and economic justice. **(This is the biggest lie of all....).**
38. Banks should be able to offer mortgages (as distinct from administering national bank mortgages). **(The whole subject of housing needs to be reviewed and new policy considered).**
39. Economic inequality is desirable; the greater the ratio between top earnings and bottom earnings, the better. **(Another lie not least because the rich do not and cannot spend all their earnings).**
40. 'Trickle down' economics works. **(It does not! The rich are incapable of spending all their wealth so they accumulate it).**
41. Rising house and stock market prices are necessarily a sign of genuinely increased wealth. **(That is not so — they usually only reflect newly-created money being put into anything except the spreading of the productive economy).**
42. Economic cycles are inevitable. **(It is not so).**
43. Individual greed is good and institutionalised greed is even better. **(This is *homo economicus* at work).**
44. Countries should raise money at interest on the international markets. **(No).**

45. Countries should not be autonomous; they should be controlled by others. **(They should be independent).**
46. A country's assets should be owned by outsiders. **(This lie stops a nation's people owning their own assets and getting the benefits thereof).**
47. A country's money supply should originate in the banking system rather than the national bank. **(When it originates in the banking system it is not put to proper purpose and interest is added).**
48. Employee shareholdings and involvement do not improve efficiency. **(Oh yas they do!)**
49. Political democracy does not require economic democracy. **(All the talk about 'democracy' amounts to a lie unless the economic aspect is considered).**
50. Even though today's banking system money is created out of nothing there is a time value to borrowed money. **(If the money is created out of nothing, it has no time value.....)**
51. Environmental matters are extraneous and impose extraneous cost. **(Good heavens! These madmen (they are usually men) are destroying the world and they don't care!)**
52. Not only ethics but belief in God should be eschewed. **(Ethics is certainly essential if we are to hold up our heads as human beings).**
53. Economics is essentially a separate subject which does not have to take account of other subjects. **(Oh yas it does! And binary economics takes account of physics, ethics, biology, history, psychology and many other subjects).**
54. The creation of money out of nothing and the addition of interest does not require even more creation and even more debt. **(Oh yas it does!).**

55. Population growth is inevitable. **(It is not inevitable. Moreover, smaller populations do NOT necessarily have a diminished ability to create wealth.)**

56. An understanding of technology is irrelevant to economics. **(It is highly relevant).**

57. Jobs can be exported. **(If they are exported, the spending power of the jobs is removed from the domestic economy).**

58. Domestic manufacturing does not matter. **(It matters very much).**

59. Education and training suffice for economic needs. **(They do not suffice — wide capital ownership is also necessary).**

The binary landscape

However, Binary Economics becomes easily understood if the fifty nine false assumptions of prevailing economics are one by one, and simply, *reversed* **(v. the orange reversals above)**.

Quite soon, it becomes apparent that a different picture is emerging and then, long before all the false assumptions have been reversed, it is brightly clear that a totally new landscape — **the Binary landscape** — has emerged.

Next page: **Comparison**

<http://www.binaryeconomics.net/wordpress/fundamentals/binary-economics-vs-conventional-economics/>

Comparison

Binary Economics versus Conventional Economics:

A good understanding of binary economics can be obtained by contrasting various aspects with comparable aspects in conventional economics (especially mainstream neoclassical economics).

CONVENTIONAL ECONOMICS

BINARY ECONOMICS

The first contrast is that mainstream neoclassical economics claims to be primarily a **positive economics** (i.e., an analysis of ‘what is’) whereas binary economics is considered (by mainstream neoclassical economists) to be primarily a **normative economics** (proposing an economic system that ought to be).

However, as compared to mainstream neoclassical economics, binary economics undoubtedly has a superior account of physical reality (i.e., of what is) – *particularly in its analysis called productiveness*. Binary economics is therefore both a **highly positive economics** and a **highly normative** one.

Secondly, in its physical analysis of who or what creates the wealth, mainstream neoclassical economics upholds the concept of **productivity** (generally **labour productivity**). This attributes most, if not all, wealth creation to labour.

In complete contrast, binary economics has the new concept of **productiveness** giving fair credit to the contributions of *both* labour and capital. The binary productiveness analysis, as an understanding of physical reality, is far superior to the productivity analysis of mainstream neoclassical economics.

Thirdly, conventional mainstream neoclassical economics believes that **interest** (as opposed to administration cost) is always necessary.

However, binary economics, again in complete contrast, states that, certainly where the development and spreading of productive (and the associated consuming) capacity are concerned, interest (as opposed to administration cost) is **not** necessary (because a supply of interest-free loans coming from the national bank may be used).

Fourthly, for **newly-created money**, conventional economics upholds the doctrine of the Time Value of Money

But binary economics, noticing that *money is created out of nothing by the banking system*, denies the Time Value doctrine. Consequently, binary economics rejects conventional financial savings doctrine (that there must be financial savings prior to investment) – *no financial saving is necessary if money can be created out of*

nothing. Indeed, what matters is whether the newly-created money is interest-free; whether it can be repaid; whether there is effective collateral; and whether it goes towards the development and spreading of various forms of productive (and the associated consuming) capacity.

Fifthly, an assumption of **general scarcity** is at the heart of conventional economics. Binary economics, however, denies the assumption of general scarcity. As Amartya Sen has shown, for example, starvation is primarily due to lack of money in the hands of the starving and not the general absence of food. Thus it is human attitudes, practices and institutions which are at fault.

The contrast continues.

Thus conventional economics:-

is largely unconcerned that the present money supply (mostly created by fractional-reserve banking) is **generally not directed at productive capacity** in practice engenders a continual inflation conceives of a self-centred *homo economicus* eschews ethics and belief in God ignores the imbalance in power relationships between people.

But binary economics views it as essential that:-

the money supply be directed at the **development and spreading of productive (and the associated consuming) capacity** the money supply be not inflationary, indeed, should be *counter-inflationary* recognises *homo reciprocans* ethics and belief in God be upheld account be taken of the imbalance in power relationships between people.

Conventional economics claims that it promotes a '**free market**' which is **free, fair and efficient**.

Very fundamentally, binary economics rejects this claim. It states that the present '**free market**' is **unfree, unfair and inefficient** not least because the 'free market' thinks it does not matter who owns productive capital and how it is distributed and does not worry if people do not

have independent incomes.

In a quite remarkable way the two economics differ on the subject of **democracy**. Conventional economics only upholds the **periodic political vote** (as in, for example, elections to government). It never mentions economic democracy.

Binary economics upholds the periodic political vote but then deepens democracy by insisting that **productive capital and the practical everyday power its ownership gives to individuals be widely distributed as well**. In binary economics freedom is only truly achieved if all individuals are able to acquire an independent economic base. In short, binary economics upholds political democracy plus **economic democracy**.

Perhaps most importantly of all, conventional economics is generally heedless of (or at least, not directly involved with) **environmental issues** but, even if it does heed them, does not have the specific mechanisms to address the environment in a large-scale way. Indeed, conventional economics generally views environmental solutions as **imposing an economic cost**, and a large one at that.

Binary economics, however, again in complete contrast, does have the mechanisms – particularly, interest-free loans – and its solutions **do not impose economic cost**. With binary mechanisms, large-scale environmental projects are possible

Lastly, conventional economics claims that its mathematical equilibriums are a manifestation of a world-encompassing **objective science** expressing universal values.

But binary economics denies that claim. Indeed, in this website the page FALSE ASSUMPTIONS sets out *fifty nine* false assumptions of mainstream neoclassical economics. *It only needs two or three basic assumptions to be false for all of an economics to be false.*

Next Page: **Productiveness**

Productiveness

<http://www.binaryeconomics.net/wordpress/fundamentals/productiveness/>

ON THIS PAGE: [Different Animals](#) • [Conventional Productivity](#) • [Binary Productiveness](#) • [Criticism of Binary Economics](#) • [Footnotes](#)

Different Animals

Students of binary economics may wish to be briefly introduced to an important binary concept — **productiveness**.

Conventional *productivity* and binary *productiveness* are completely different animals.^[71]



Conventional Productivity

Conventional *productivity*, in the conventional classical and neo-classical sense, is the ratio of labor as input to the overall output.^[72] As a mathematical fraction, it is total output divided by human labour input.^[73] Conventional productivity attributes everything to human labour. Thus Adam Smith (*The Wealth of Nations*, 1776) attributes all growth to human labour and views machines as being but things which ‘abridge’ labour. In short, labour does it all.

NB. Adam Smith did his thinking in the years 1760 onward which were **before** the industrial revolution had clearly manifested itself as a machine-led phenomenon.

Binary Productiveness

In contrast, binary *productiveness* is the percentage of total input that labor and capital each contributes to the output.^[74] In binary economics, labor and capital are viewed as being of a different, although co-operating, nature and therefore should be seen as separate inputs contributing to output.^[75] Capital contributes an increasing percentage as even Marx understood.^[76] For example, a man digging a hole with his hands only will take four hours. But, by using a form of capital — a shovel — he can dig the hole in one hour or dig four holes in the same amount of time it took him to dig one hole with his hands. The productiveness of the human labor is 25% while the productiveness of the capital shovel is 75%. *Together, of course, man and shovel — labor and capital — produce much more than they would produce separately.*^[77]





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And when a mechanical shovel is used the productiveness of the human labor is 10% while the productiveness of the capital shovel is 90% AND there is much greater overall output.





Fractionating columns

Where binary productiveness is concerned, it is also useful to consider the examples of an automated factory or a huge dam producing electricity and fresh water. In the case of the automated factory there is minimal or no human input (the work involved in design and building is over and has received its payment, and maintenance and repair are only maintenance and repair rather than a direct contribution to production).[78]



Tidal barrage power plant

In the case of the dam, with relatively little human input although it is critical, **the physical output of the capital is huge** and binary economics views the sun, weather and gravity as greatly contributing to the production: The sun, weather and gravity are co-operating capital assets even if they are ones which cannot be owned.^[79] Binary economics views both humans and capital assets as production factors having an independent productiveness *which does not stop their co-operating with other independent production factors* but which does mean that their contribution to production requires individual recognition.

Criticism of Binary Economics

Criticism of binary economics tends to concentrate on the example of the man digging the hole. A paper by Timothy D. Terrell^[80] summarizes a critique given by Timothy Roth^[81] on the shovel example. The criticism claims that: a) somebody invented the shovel; b) the shovel cannot be independent. Roth argues that someone with human capital had to invent the shovel before it could be used, so the presence of the shovel is not independent of human capital. Also, Roth notes the presumption that the human hole digger has no role in the productiveness of the shovel.

But, firstly, the fact that somebody invented the shovel has nothing to do with its present use for digging a hole and binary economics views the shovel as an independent contributor which co-operates with the man just as the man co-operates with the shovel.

Secondly, just as two humans can, and do, co-operate, so the *man and the shovel co-operate to dig the hole and produce far more holes than either the man or shovel could do by themselves.*

Moreover, binary economics does not say the human digger has no role in the shovel's productiveness – both binary economics^[82] and Roth agree^[83] that man and shovel together produce far more than man or shovel separately.

Furthermore, when the examples of a fully automated factory, or a huge dam producing electricity and fresh water, are considered, the

critics of the binary analysis of productiveness have a problem — in the case of the fully automated factory **there is no human input** (design and building have been paid for, and maintenance and repair are maintenance and repair but not a direct contribution to production).



In the case of the dam, with relatively little human input although it is critical, **the physical output of the capital is huge** (and, don't forget, the sun, weather and gravity can be viewed as co-operating capital assets but ones which cannot be owned).

Footnotes

71. Robert Ashford & Rodney Shakespeare (1999) op. cit.

Robert Ashford *Binary Economics – an overview* (2006)

<http://ssrn.com/abstract=928752>

72. Mark Douglas Reiners *The Binary Alternative and the Future of Capitalism* available at www.cesj.org

73. Robert Ashford (1990) op. cit.

74. Mark Douglas Reiners op cit.

Robert Ashford *Louis Kelso's Binary Economy* (The Journal of Socio-Economics, vol.25, 1996)

75. Mark Douglas Reiners op cit.

76. Louis Kelso *Karl Marx: The Almost Capitalist* (American Bar Association Journal, March, 1957).

77. Robert Ashford (1990) op. cit.

78. Robert Ashford (1990) op. cit.

79. Mark Douglas Reiners op cit.
Robert Ashford & Rodney Shakespeare (1999) op. cit.
80. Timothy D. Terrell *Binary Economics: Paradigm Shift Or Cluster of Errors?* Ludwig von Mises Institute
81. Timothy P. Roth, (1996) *A Supply-Sider's (Sympathetic) View of Binary Economics* Journal of Socio-Economics 25 (1) pp. 58-59.
82. Robert Ashford & Rodney Shakespeare (1999) op. cit.
83. Timothy P Roth (1996) op. cit. p. 60.
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Next page: [Summary Diagram](#)

<http://www.binaryeconomics.net/wordpress/fundamentals/summary-diagram/>

Summary Diagram

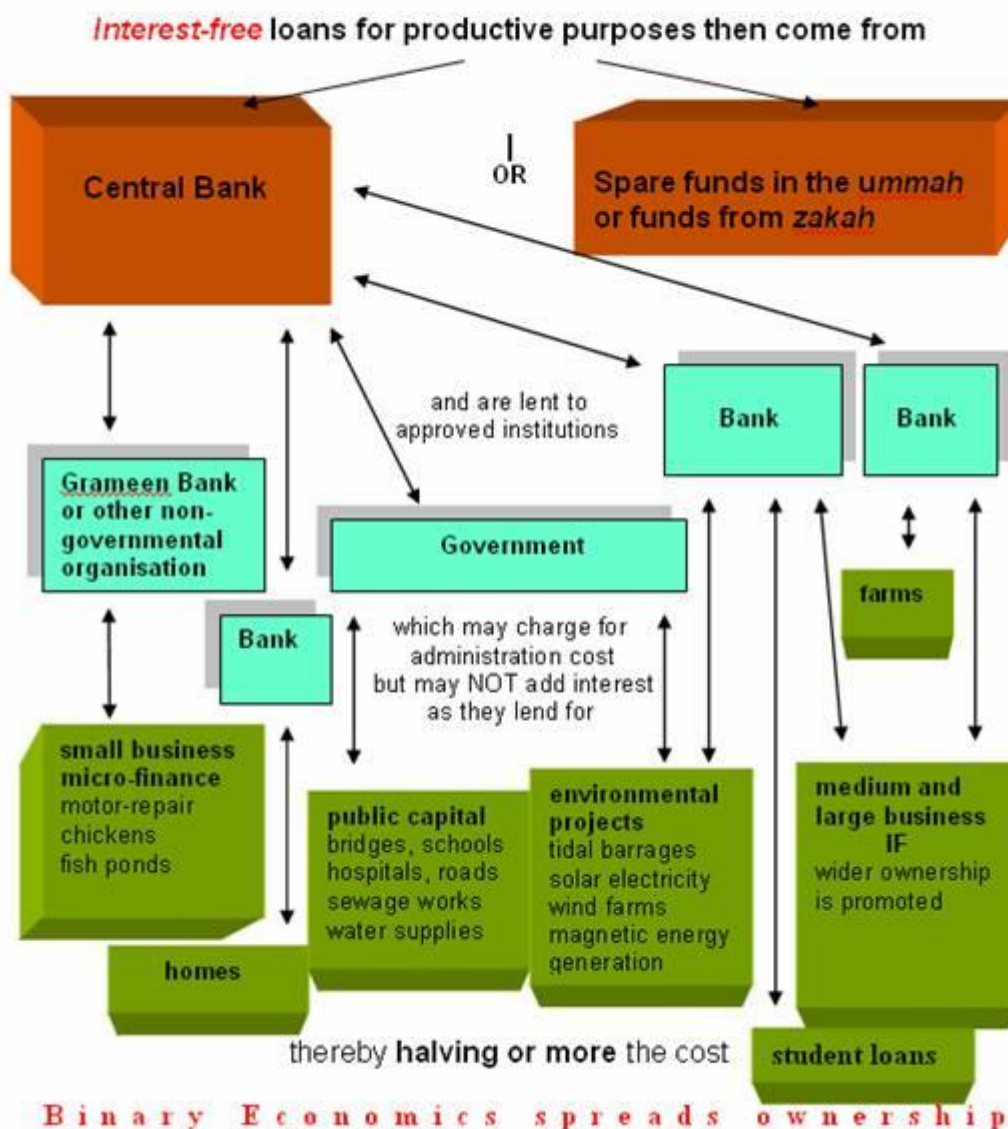
A Visual Summary of the Main Binary Mechanisms and Solution to the Global Financial and Environmental Crisis

Below is a visual summary of the main aspects of binary economics which can be used to provide a gentle but powerful solution to the global financial and environmental crisis. It will prove helpful to study the diagram for a few minutes.

NB The banking system is gradually stopped (by a gradual rise to 100% banking reserves) from continually creating money out of nothing. Instead it lends its own capital and (with permission) the deposits of customer, and such lending may be at interest. As the banking system's money creation is stopped, a supply of national bank-issued interest-free loans (administered by the banking system) is opened up with the supply being directed at the development and spreading of productive (and the associated consuming) capacity. In effect, there will be two interest rates – a zero rate for binary purposes (plus administration cost) and the other for the rest of the economy.

Please also notice that, by using the banking reserves mechanism, the national bank has a macro tool in addition to that of interest rates to control the total volume of money in the economy.

A gradual rise to 100% banking reserves requirement stops the banking system from creating money out of nothing



Dharma economics • *Tawhidi* economics • Christian economics
Kin-dom of God economics • Humanomics • Faith economics
 Islamic economics • Ethical economics • Justice economics
Binary Economics • *Shalom* economics • Indigenous economics

Next page: **NEW PARADIGM Booklist**

<http://www.binaryeconomics.net/wordpress/references/booklist/>

Booklist

Selected Texts

Ashford, Robert *The Binary Economics of Louis Kelso* (Rutgers Law Journal, vol. 22, 1990).

Ashford, Robert *Louis Kelso's Binary Economy* (The Journal of Socio-Economics, vol. 25, 1996).

Ashford, Robert & Shakespeare, Rodney (1999) *Binary Economics – the new paradigm.*

el-Diwany, Tarek (2003) *The Problem With Interest.*

Gates, Jeff (1999) *The Ownership Solution.*

Gates, Jeff (2000) *Democracy At Risk.*

Gauche, Jerry *Binary Modes for the Privatization of Public Assets* (The Journal of Socio-Economics. Vol. 27, 1998).

Gauche, Jerry *General Stock Ownership Corporations: Another Step in Broadening Capital Ownership* (30 American University Review, 1981).

Greenfield, Sidney M. *Making Another World Possible: the Torah, Louis Kelso and the Problem of Poverty* (paper given at conference, Columbia University, May, 2006).

Kelso, Louis & Kelso, Patricia Hetter (1986 & 1991) *Democracy and Economic Power.*

Kelso, Louis & Adler, Mortimer (1958) *The Capitalist Manifesto.*

Kelso, Louis & Adler, Mortimer (1961) *The New Capitalists.*

Kelso, Louis & Hetter, Patricia (1967) *Two-Factor Theory: the Economics of Reality.*

Kelso, Louis (1957) *Karl Marx: The Almost Capitalist* (American Bar Association Journal, March, 1957)

Kurland, Norman *The Federal Reserve Discount Window* (Winter 1998, Journal of Employee Ownership Law and Finance).

Kurland, Norman *A New Look at Prices and Money: The Kelsonian Binary Model for Achieving Rapid Growth Without Inflation.*

Kurland, Norman; Brohawn, Dawn & Michael Greaney (2004) *Capital Homesteading for Every Citizen: A Just Free Market Solution for*

Saving Social Security.

Miller, J.H. ed., (1994) *Curing World Poverty: The New Role of Property.*

Reiners, Mark Douglas *The Binary Alternative and Future of Capitalism.*

Shakespeare, Rodney & Challen, Peter (2002) *Seven Steps to Justice.*

Shakespeare, Rodney *Integrating Islamic Finance into the Mainstream* (paper delivered at Harvard, April, 2006)

Shakespeare, Rodney (2007): *Binary Economics – The Modern Universal Paradigm.*

Shakespeare, Rodney & Proudfoot, Wilf (1976) *The Two-factor Nation.*

Turnbull, Shann (2001) *The Use of Central Banks to Spread Ownership.*

Turnbull, Shann (1975/2000) *Democratising the Wealth of Nations.*

<http://www.binaryeconomics.net/wordpress/references/links/>

Links

Selected External Links

- Center for Economic and Social Justice: www.cesj.org
- Global Justice Movement Org: www.globaljusticemovement.org
- **Global Justice Movement Net: www.globaljusticemovement.uk**
- Integrating Islamic Finance into Mainstream: www.globaljusticemovement.net/articles/7HUF-IslamicFinance-rs-0603.htm
- Binary Economics – An Overview by Professor Robert Ashford: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=928752
- The Binary Alternative & The Future of Capitalism: www.cesj.org/resources/articles-index/the-binary-alternative-the-future-of-capitalism-by-mark-douglas-reiners/
- The Binary Economics of Louis Kelso: www.cesj.org/resources/articles-index/the-binary-economics-of-louis-kelso-abstract/
- The Use of Central Banks to Spread Ownership: <http://ssrn.com/abstract=277508>
- A New Look at Prices and Money: <http://www.cesj.org/binaryeconomics/price-money.html>

- DEMOCRATISING THE WEALTH OF NATIONS – from new money sources and profit motives – by SHANN TURNBULL: <http://cog.kent.edu/lib/TurnbullBook/TurnbullBook.htm>
 - Capital Democratization – <http://www.ssrp.com> – not active – new link needed
 - **Binary Economics – Rodney Shakespeare – binaryeconomics.net – summary paper**
 - Binary Economics on Wikipedia: https://en.wikipedia.org/wiki/Binary_economics
-

Next page: **Action**

<http://www.binaryeconomics.net/wordpress/action/>

Action

Having read and understood the presentation of Binary Economics on this website, you may wish to consider taking further action. It is unlikely, outside academic circles, for people to be able to campaign on the idea of Binary Economics as a complete paradigm. However, there are many different aspects of the ideas put forward that campaign groups may adopt, for example:-

CITIZENS could DEMAND interest-free (repayable) loans from a government-controlled bank, to fund large-scale public capital projects thereby providing jobs. At the same time, the interest-free mechanism can be used, over time, to diminish national debt. The mechanism can also be used, over time, to develop and spread the real economy to EVERY individual in society. In particular, it can fund social housing at half or less of the present cost. NB The interest-free loans are to be repaid and cancelled.

STUDENTS could DEMAND that all loans to them are interest-free, and they could link up with unions and workers to DEMAND that national bank (or European Bank) interest-free loans are immediately made available for big public capital projects, including social

housing, thereby creating work for other people. Once there is a general understanding of the power of national bank-issued interest-free loans, students could demand the extension of their use to other areas.

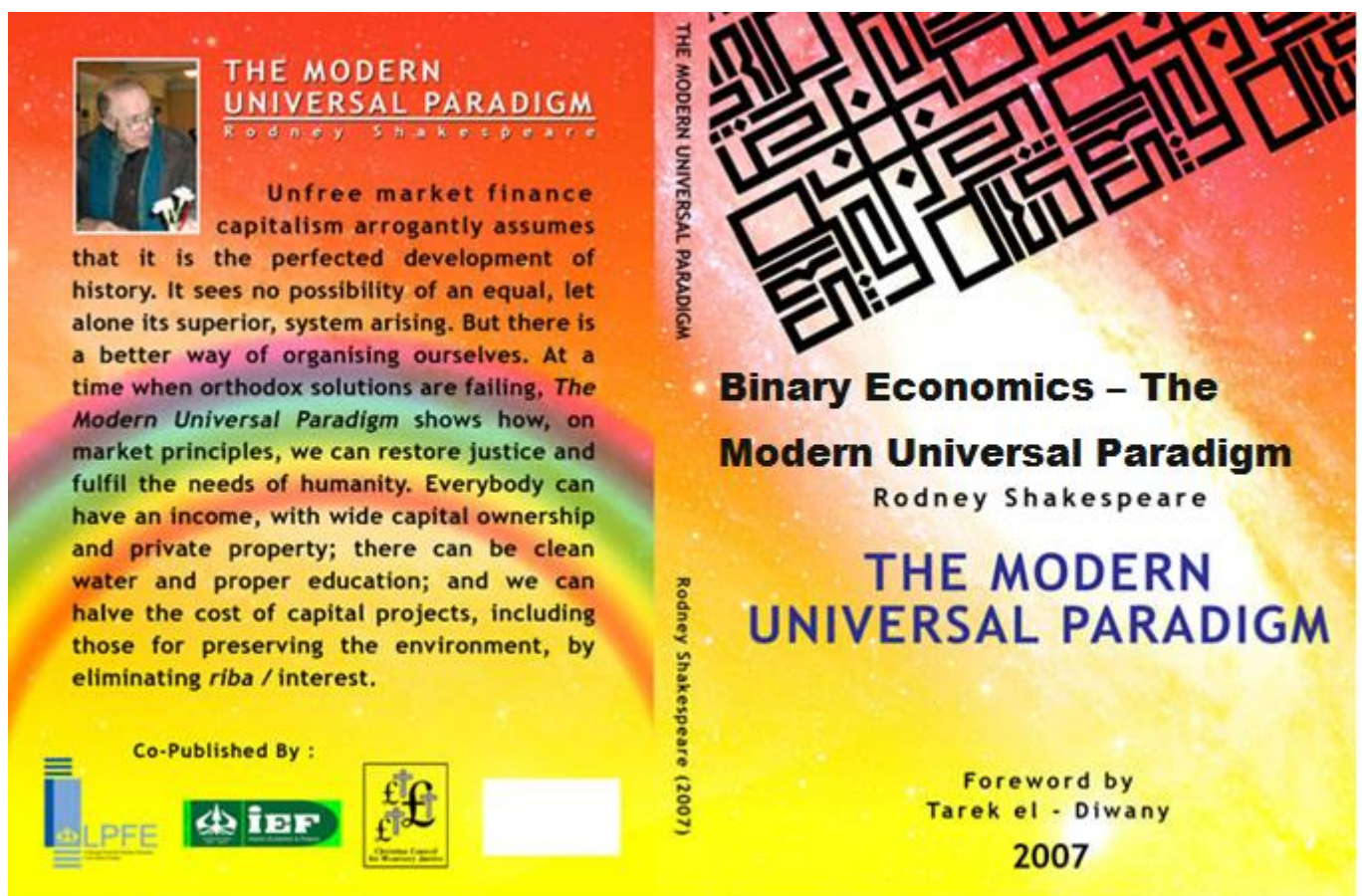
Meanwhile, for further information you can **Contact Us** or **Buy the Book**

<http://www.binaryeconomics.net/wordpress/action/buy-the-book/>

Buy the Book

For the full list of academic references including the original hardback Binary Economics (1999), see **References:**

**Binary Economics – The Modern Universal Paradigm
– by Rodney Shakespeare – 2007 – ISBN 978-979-3634-13-5**



ALSO INCLUDE
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