Inefficiencies and Inequities of Capitalism - And how they can be reduced
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Abstract
Perpetual property rights to land, structures, corporations and money allows investors to be overpaid to create inefficiencies and inequities in a way not measured by accountants and little noticed by economists. All intellectual property rights have limited life. Most assets depreciate over time except modern forms of stable money, collectables and land in developing urban areas. Private ownership of urban land creates inequities and inefficiencies from the windfall gains generated by external investment from either the private and/or private sectors. The Old Testament describes limited life land tenure that today could be used to make urban development self-financing, efficient and equitable.

To illustrate the inequities, inefficiencies and un-sustainability of modern capitalism the paper describes an alternative system of property rights for owning realty, corporations and money. Ancient forms of money incurred a storage cost that Proudhon proposed for modern money as promoted by Gesell (1919). Keynes (1936: Chapter 23, part VI) and Fisher (1933) supported the introduction of cost carrying money that invigorated many communities during the Great Depression. Cell phone money, used in developing countries to democratize finance, proves that cost-carrying money is practical today.

Investors obtained limited life property rights in all early business associations and corporations. Ownership of privately financed US toll roads, bridges and other public assets had to be transferred to community ownership after their payback period. Ownership transfer is still used today by governments to finance public infrastructure like power stations and tunnels. The paper makes a case for a tax incentive to encourage all private sector corporations to create a stakeholder class of shares to facilitate the transfer of their ownership to employees, suppliers, distributors, agents and customers resident in the host community. Localizing control provides a basis for residents to protect their environment on a self-financing basis that can attract more alien investment without undermining democracy. A dividend income can then be provided to all citizens to provide universal prosperity without: growth, pensions, welfare, more taxes and bigger governments while democratizing the wealth of host communities and nations on an environmentally sustainable basis.

Keywords: Capitalism, Ecology, Inefficiencies, Inequities, Surplus profits

Category: (B59) (D02) (E42)
Inefficiencies and Inequities of Capitalism - And how they can be reduced

1. Introduction

This paper identifies how the dominant rules for owning realty, firms and current forms of money introduce inefficiencies and inequities in market economies by overpaying their owners. Alternative ecological rules are described for increasing the efficiency, equity and resilience of capitalism to improve the sustainability of both human society and the natural environment.

The paper identifies how overpayments are not reported by accountants and so not noticed by economists. As a result economists cannot fully explain how asset ownership becomes so unequal in capitalist societies. Overpayments of investors from asset ownership are inconsistent with the rational for a market economy that assumes that market forces will minimize investors from being overpaid.

All intellectual property has limited life. However, property rights to land and corporate entities can obtain right of perpetual succession. Excessive life of ownership can provide investors with economic values in excess of the incentive to bring forth investment defined as “surplus profits” (Turnbull 1997: 142; 2006).

However, the ownership of land and the life of debts were limited in biblical times to a “Jubilee” period of 50 years (Leviticus, 2001: 25, 8-55). In the 14th century the Catholic Pope adopted a Jubilee of 25 years (Britannica, 2011). As a reaction to laws passed in England to enclose common land for private use, Thomas Spence (1775) proposed that only residents could own land to be held in common in their Parish and that only members of each Parish obtain the right to elect a member of Parliament.

The author has demonstrated the attraction of limited life investment on a number of occasions as a serial entrepreneur. I have “walked the talk” raising millions of dollars from investors who were offered limited life ownership. The first venture was Saxonvale Vineyards established in 1970. Selling investors the income rights from 15-year leases over the vineyard financed the cost of purchasing the 243 hectares of land and developing it with drip irrigation. Selling 15 years leases in 1981 likewise financed another venture that purchased and developed 10,000 hectares of semi desert land to create an irrigation cotton farm on the Barwon River in Australia. Through Australian Film Underwriters, my colleagues and I financed a number of documentary films from 1980 to 1983. We offered investors rights to income for only seven years. Ownership of the copyright after this period reverted to the Producer who obtained any residual income after this period. The Present Value of any income received after seven years becomes inconsequential for investors with a high opportunity costs that discounts future values.

Most assets depreciate over time except modern forms of stable money, collectables and land in developing urban areas. Private ownership of urban land creates inequities and inefficiencies by its value being increased by the investment of others improving amenities servicing the land. Uplift in land values is not created by what the land may produce but how well its location is serviced. As a result, public money spent by local, state and/or central governments on urban infrastructure create private profits for the landowners. In most communities the uplift in land values are neither measured nor reported and so like surplus profits not noticed by economists. So when economists undertake studies on the price of housing they are unwittingly also considering the price of land. The cost of land can represent over half the price of a house in the US (Davis & Palumba 2006) with Roskam (2006) reporting, “the cost of land comprises 80 per cent of the price of a house” in Sydney. Similar figures are reported in the UK (Turnbull 2007).

To illustrate the inequities, inefficiencies and un-sustainability of modern capitalism the paper describes an alternative system of property rights for owning realty, corporations and money. Ancient forms of money incurred a storage cost that Proudhon (1840) proposed for modern money as promoted by Gesell (1919). Keynes (1936: Chapter 23, part VI) and Fisher (1933) supported the introduction of cost carrying money that invigorated many communities during the Great Depression. Cell phone money, used in developing countries to democratize finance, proves that cost-carrying money is practical today (Turnbull 2010b) as does also the “Chiemgauer” privately issued currency in Southern Germany (Gelleri, 2009).

Investors obtained limited life property rights in all early business associations and corporations. Ownership of privately financed US toll roads, bridges and other public assets had to be transferred to community ownership after their payback period. Ownership transfer is still used today by governments to finance public infrastructure like power stations and tunnels. The paper makes a case for a tax incentive to encourage all private sector corporations to create a stakeholder class of shares to facilitate the transfer of their ownership to employees, suppliers, distributors, agents and customers resident in the host community. Localizing control provides a basis for residents to protect their environment on a self-financing basis that
Inefficiencies and Inequities of Capitalism - And how they can be reduced

can attract more alien investment without undermining democracy. A dividend income can be provided to all citizens to provide universal prosperity without: growth, pensions, welfare, more taxes and bigger governments while democratizing the wealth of host communities and nations on an environmentally sustainable basis.

As I stated in my first book (Turnbull 1975: 4) “The greatest benefits that may arise from the new rules for owning property may be the modifications they may initiate in man’s values and behavior patterns”. This aspect is discussed in Section 3.2 with the proposals for changing the economy through self-interest and market forces.

The next section two identifies the need to reform capitalism to make it more efficient for achieving an environmentally sustainable society. Section three described politically attractive techniques for introducing what is described as “ecological” capitalism. A vision of a sustainable society is presented with concluding remarks in Section four.

2. Why we need a new type of capitalism

This Section identifies how the existing static, exclusive and perpetual rules for owning and controlling money, corporations and realty are inefficient and inequitable. To ameliorate these shortcomings, different rules are proposed. These are described as “ecological” because they mimic the character of living things by being dynamic, inclusive and time limited.

Ancient ways for owning money described below need to be re-instated because modern money can misallocate resources and it has become a major driver in generating wealth inequality (Turnbull 2010c), and the over expansion of the financial sector described as “financialization” (Palley 2007). Haldane (2011) identified the accelerating growth of the finance sector before the 2008 crisis. Banks creating credit to lend to other banks fueled growth. As a result over half of all bank credit is used finance bigger bank balance sheets that have become larger than the real product produced by their host economies. The lending to other banks has made banks much more interconnected and interdependent creating what Haldane describes as a “doom loop” from their bigger size, increased leveraged and increased illiquidity. Haldane represents the Bank of England as its executive director of financial stability in establishing new Basle standards for global banks. He concludes that more progress is required and notes that new standards inevitable fail to fix problems whose deep-rooted sources have created a “doom loop”.

Exacerbating the problem of banks is a problem shared by non-banks. This arises from the property rights of corporations allowing investors to be overpaid with “surplus profits” (Turnbull 2006) in a way that is not reported by accountants and so not recognized by economists to generate further inequality and the misallocation of resources. Accounting doctrines exacerbate misallocation of resources and inequities by treating a proportion of investment returns as a cost to reduce reported profits by an imaginary expenditure described as “depreciation”. Inequality is also generated from the private ownership of urban land that can capture windfall gains generated from the investment of others in providing site services, facilities and amenities. These concerns are outlined in turn below.

2.1 The problems of modern money and credit

Markets allocate resources through prices and prices are defined in terms of money. However, money is no longer defined in terms of any specific goods and/or services. As a result the price signals created by legal tender, that is now a national monopoly, can distort the allocation of resources to a greater degree than taxes and tariffs with “faulty feedback” signals (Jacobs 1985: 156).

A mind experiment can illustrate this point using two assumptions: (a) Demand for foreign exchange in any one region is proportional to the population and (b) Western Australia that earns 60 per cent of the foreign exchange of Australia can issue its own currency for its population that only represents 10 per cent of the Australian total. This means that Western Australians are earning six times the foreign exchange they can consume while the Eastern States with 90 per cent of the population only obtain 36 per cent (0.9 x 0.4) of the foreign exchange they require. Separately currencies would make the Western Australia money worth much more than the money in the Eastern States. Manufacturing, tourism and the export of education services would boom in the Eastern States with folk in the Eastern States migrating to the West to obtain a higher standard of living. This mind experiment illustrates a fundamental problem of the Euro and the concerns of Friedman & Schwartz (1996).

More importantly it illustrates how exclusive money can seriously distort resource allocation to support the
Inefficiencies and Inequities of Capitalism - And how they can be reduced

case presented by Hayek (1976a, b) of de-nationalizing money to have competing currencies. The price distortions and resulting inefficiency of modern money are exacerbated by it being allowed to earn interest that also introduces inequities.

Proudhon (1840) pointed out that all real assets depreciated and/or carried a storage cost except paper money. To provide a level playing to create what Suhr (1990) described as “neutral money”, Gesell (1919) proposed that money should only be issued if it carried a cost. The private issue of cost carrying money was initiated in Germany in the 1920’s and was so successful in stimulating depressed communities during the Great Depression that it soon spread in Europe and on to the US (Fisher 1933). Keynes (1936: Chapter 23, part VI) supported cost carrying money that was described as “Stamp Scrip”. Keynes described Gesell as “unduly neglected prophet”.

So successful was the use of stamp scrip in Germany, Austria and the US that it threatened the monopoly of official money and so was banned. The carrying cost was created by the need to periodically affix a stamp on the back of the script. Revenues from the sale of stamps paid for the redemption of the money. It allowed communities to stimulate their economies with a self-financing with self-liquidating locally issued currency. The Economist (2009a) suggested that “depreciating currencies” be re-introduced to stimulate economies after the Global Financial Crisis (GFC). Today, paper money and stamps would be replaced with cell phone money that is now spreading around the world. There are now four billion cell phones, mostly in developing nations (The Economist 2009b; Turnbull 2010b, c).

Cell phones have become electronic storehouses for money. In ancient Egypt, grain was used as money and deposited in storehouses. Deposit notes were issued in form of scratches on shards of pottery. Rather than earn interest, a deposit incurred a storage fee and in some places also a tax (Suhr 1989). Cost carrying money has been the rule throughout history until the duplicity of fractional banking was introduced that allowed money to be created out of nothing. The Governor of the Bank of England, Mervyn King, suggested that the practice of “fractional banking” be eliminated (King 2010).

The ability of private banks to create credit out of nothing and then charge an interest rate exacerbates “financialization”, wealth concentration, inefficiencies and increasing instability in the financial system discussed by Haldane (2011). Huber & Robertson (2000: 89) estimated that if instead the government carried out the credit creation then UK tax collections in 1999 could have been reduced by 15 per cent.

As note by the Governor of the bank of England “of all the many ways of organizing banking, the worst is the one we have today” (King 2010). A number of the indefensible practices of the existing system are explained in Turnbull (2010c). The indefensible practices are summarized in a Table¹: “Mysteries of a failed financial system and how failure can be avoided”. The introduction of ecological forms of locally established currencies described in section 3.1 would avoid the need for macro-prudential regulation such as is being attempted with new Basle standards. It would appear that their introduction is now urgently required to supplement the existing system and provide a fall back position to allow the real economy to survive when another financial crisis arises. Is through a break down of existing systems that the opportunity arises to introduce an alternative system described later.

2.2 The problems of perpetual property rights

Perpetual property rights for investors allow investors to become overpaid. All intellectual property rights are time limited. Time limited investments are the norm as productive assets wear out or are depleted. Perpetual property rights have only been created for owning land and corporations. To create a level investment playing field time limits need to be applied to all investments. This can also ameliorate the overpayment of investors and the associated concentration of wealth. Overpayment of investors is also inconsistent with the objective and reason for having a market economy to efficiently allocate resources.

In making a decision to invest, a commercial investor will not rely on the unforeseeable future to recover his or her investment and obtain a competitive return. To the extent an investor receives a return after their foreseeable feature the investors is obtaining value in excess of the incentive to invest. Values in excess of their incentive to invest are defined as “surplus profits” (Turnbull 1997: 142; 2006). Unlike profits, or any excessive profits that are reported by accountants, surplus profits are not identified or reported because

accountants do not identify investment time horizons. This makes surplus profits different from other types of economic rent that are reported by accountants and why they need their own name to describe them.

Because surplus profits are not reported, economic analysts are denied understanding how wealth in the form of asset ownership becomes highly concentrated. Surplus profits can be very substantial to become one or more times greater than the original investment (Turnbull 1973). More critically, economic analysts do not have a basis for understanding the full cost to communities that host alien investment. As a result foreign investment is widely promoted even though it may introduce excessive cost over benefits from its growing “unlimited, unknown and uncontrollable foreign liabilities” (Penrose 1956).

Another problem with the profits reported by accountants is that they under-report economic returns. This is because accountants reduce reported returns by creating artificial costs described as depreciation or depletion. This artificial cost typically creates a tax deduction because unlike accountants, governments consider the cash received as a return of the investment and not return on the investment. In this way an investment being depreciated over then years that is producing a net cash return of 20 per cent of the investment will only be taxed on 10 per cent as depreciation reduces the profit by 10 per cent per year for ten years. With a 30 per cent tax rate the reported return becomes a marginal 7 per cent. The after tax cash return to the investor becomes the tax free 10 per cent from depreciation plus the 7 per cent to provide an after tax profit of 17 per cent. This reduces to an acceptable 11 per cent when taking into account the time value of money.

The policy lesson for governments from this insight is that ownership of any investment should be written off at the same rate that it is written off for tax purposes. This would not change the reported profits as the cost is already taken into account by the artificial cost of depreciation. For the various reasons set out in Turnbull (1998, 2000, 2001a) it makes good sense for the ownership of the assets being written off to be vested in the individuals who are essential for a firm to exist such as its suppliers, employers and customers. In this way surplus profits become shared with stakeholders who participate in their creation. This provides one way to democratize the wealth of communities and so nations.

To sum up, corporations introduce seven deadly sins to capitalism as they can be:

1. Inefficient by not distributing all their surpluses to allow their managers, rather than market forces, to allocate their investment funds and allowing firms to grow too big to be allowed to fail;
2. Inequitable by over-paying investors with surplus profits not reported by accountants and not understood by economists;
3. Exploitive by not sharing surplus profits with their stakeholders on whose contribution they depend for their existence and to make profits.
4. Alienating by not sharing power with employees and other stakeholders.
5. Poorly accountable while acquiring more resources, social, and political powers than some levels of government, yet not directly accountable to their stakeholders whose lives they affect.
6. Non-transparent, hiding the identity of their ultimate ownership and control with owners voting on a plutocratic basis that provides the wealthy with the most votes.
7. Degrading for democracy by their influence over the political process and by providing government services.

2.3 The problems of private windfall gains from public investment

Another way in which the current rules of ownership create inefficiencies and inequities is from windfall gains obtained from the private ownership of urban land. The uplift in land values can occur from the site being approved for greater development and/or from surrounding improvements made in servicing the site with utilities, facilities and amenities by various levels of government and/or by private investors.

It is both inefficient and inequitable for government expenditure spent on utilities, roads, transport, schools, hospitals and other amenities to provide private profit to nearby landowners. The degree to which public investment creates private profit is not commonly revealed because economists or anybody else do not typically prepare balance sheets for communities. What is not measured is not managed. Windfall gains, like surplus profits are not generally reported and so not recognized by economists, policy makers and governments.

An illustration of the extent of how government investment can generate private profits is provided by the construction in 1999 of the Jubilee underground tube line in London. The cost of the project was 3.5 billion pounds. The uplift in land values within 1,000 yards of each of its eleven stations was 13 billion pounds (Riley 2002).
Public expenditure could have been avoided and greater equity and efficiency achieved by the landowners financing the construction from the uplift in values they obtained. Even if the landowners borrowed all the construction costs they would still have received a net benefit of 9.5 billion pounds. However, this would still be inequitable as it is not the owners who create the uplift in values but the users of the sites and facilities. Sites and services without users have may be worth little.

As uplift in land/site values are created by the community then an equitable system of ownership would allow the community to share in the values so created. If all the land, but not the buildings, within 1,000 yards of each of the 11 Jubilee station had been collectively owned by a cooperative of all residents then each resident would receive a windfall gain of around 75,000 pounds using the data and assumptions in Turnbull (2007). Each cooperative would have a net worth of 9.5/11=864 million pounds after paying for the project with each resident owning cooperative shares worth around 74,000 pounds.

While mutual ownership of land would be created by a cooperative or Community Land Bank (CLB), the buildings would still be privately held by investors and/or residents. This is how the Garden City of Letchworth 60 miles north of London was financed at the turn of the last century (Howard 1902). Both examples demonstrate how urban development can be made self-financing by capturing the values created by the community and being owned and controlled by residents.

A condition precedent for any government to finance public works that generate windfall gains is that such gains be shared on a mutualised basis with only residents as described above. By eliminating alien and foreign ownership of land, this approach would reduce the leakage of values out of communities and their host nations. CLBs provide a way to make the financing of “transition towns” self-financing to spread their emergence to create a green economy as envisaged by Berger (2010).

The ability of CLBs to make land self-financing as indicated above allows the cost of land to be removed in new towns inner city re-development projects. When land represents half the cost of house this means that CLBs can provide half cost housing for residents. It also allows the cost of land/sites to be removed for commercial investors in rental housing, retail outlets, office buildings, entertainment and sporting facilities. However, the condition for providing land without cost to commercial developers could be tied to a requirement that as they wrote off their investment for tax purposes the ownership of their investment would be transferred to nominees of the CLB. In this way all tenants in rental housing would acquire ownership of their residence without cost and the CLB would become the owners of supermarkets, office buildings and factories. The rent/rates from the commercial sector can provide cross subsidies to sustain low cost housing over generations (Turnbull 2007). In the event de-population arises as considered in Turnbull (2011), CLBs are well placed to restructure their community as they have integrated control over intergenerational facilities.

3. Making capitalism efficient, equitable and sustainable

The section outlines how the adoption of ecological property rights for owning and controlling money, firms and realty can make capitalism more efficient, equitable and sustainable.

But more importantly, ownership of income producing assets becomes universal for all citizens to provide a “third way” to distribute national income without employment or welfare. It is by this means that prosperity can be achieved without growth as sought by Jackson (2010). As the government is no longer required to raise taxes and distribute welfare, the size of government can be reduced. This in turn increases prosperity as the dead weight transfer costs of government are reduced.

Rules for owning money, firms and realty created by society can be changed by society. The incentives to change the most fundamental defining feature of capitalism arise because the new rules provide greater benefits for a greatest number of people. Because of this there exists the opportunity of obtaining a political mandate to initiate the changes described. In this way the venal materialistic values of self-interest can assist change to overcome the concerns of Trainer (2010b). The new institutions created would then provide incentives for citizens to change their behavior from the collective interdependencies that would arise.

The introduction of ecological property rights would create three new types of market institutions: (a) cost carrying money: (b) Ownership Transfer corporations (OTCs) and (c) Community Land Banks (CLBs). However, while changing the nature of property rights is a necessary condition for building a sustainable society it is not sufficient.

2 Refer to: http://www.transitionnetwork.org/
Inefficiencies and Inequities of Capitalism - And how they can be reduced

Also required is ecological control described as network governance that is ubiquitous in nature. Such is the efficacy of network governance that it spontaneously emerges when society becomes more complex and dynamic (Jones, Hesterly and Borgatti 1997). The reason for its success is because ‘Nothing can be made simpler without becoming more complex’ as noted by the founding CEO of the Visa card organization, Dee Hock (1995). In other words, as society gets more complex it requires a requisite variety of complexity in its communication and control circuits (Ashby 1968: 243). In this way tasks can be sufficiently simplified to match the limited ability of humans to multi-task and/or process data (Turnbull 2001b; 2002).

Both evolution and the analysis by Simon (1962) provide evidence that the communication and control architecture of nature creates the most robust way to create or manage complexity. Innate physical structures of nature and biota always create or manage complexity by using simpler sub-components. The universe is made up of components that Hock describes as ‘Chaords’ (Hock 1995) because they represent both chaos and order. The academic literature describes these components as ‘holons’ (Mathews 1996) as the whole creates more than the constituent parts.

A hierarchy of holons is described as a “Holarchy” (Koestler 1967). Holarchies have properties diametrically opposed to hierarchies. Hock (1995) highlighted the difference by writing:

Industrial Age, hierarchical command and control pyramids of power, whether political, social, educational or commercial, were aberrations of the Industrial Age, antithetical to the human spirit, destructive of the biosphere and structurally contrary to the whole history and methods of physical and biological evolution. They were not only archaic and increasingly irrelevant, they were a public menace.

The ecological architecture developed by evolution provides a basis for designing the governance architecture of an advanced complex global society. A democratic society governed from the bottom up composed of self-financing locally owned and control self-governing communities that are mostly self-reliant.

To allow communities to be self-governing they must become self-financing to avoid economic and so political dependency. The same principle applies to all the higher levels in the political holarchy presented in Table 1, Global Governance and Political Economy. To allow communities to become self-financing they need to stop value leaking out. Many families spend over a third of their income on rents or mortgage payments. To stop rents and interest leaking out it becomes essential for communities to establish their own local currency and minimize any external ownership of land, buildings and enterprises. As explained later, OTCs provide a way to minimize external ownership of firms and CLBs provide a way to minimize external ownership of realty.

<table>
<thead>
<tr>
<th>Level</th>
<th>Principle role (a)</th>
<th>Other roles (a)</th>
<th>Sources of funding(b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family</td>
<td>Personal and social development</td>
<td>Community and cultural development</td>
<td>Work and/or dividends, rents, profits etc.</td>
</tr>
<tr>
<td>Enterprises</td>
<td>Wealth generation</td>
<td>Fulfilling work</td>
<td>Self-financing</td>
</tr>
<tr>
<td>Neighborhoods</td>
<td>Social &amp; cultural support</td>
<td>Substitution of paid services</td>
<td>Non-profit &amp; voluntary contributions</td>
</tr>
<tr>
<td>Land banks (CLBs)</td>
<td>Income distribution between entities</td>
<td>Health, education, welfare, &amp; other infrastructure services</td>
<td>Enterprise rents &amp; gains from site trades</td>
</tr>
<tr>
<td>Cities</td>
<td>Provide infrastructure</td>
<td>Balance income between CLBs</td>
<td>Taxes from CLBs</td>
</tr>
<tr>
<td>Bio-regions</td>
<td>Federating economic &amp; political systems</td>
<td>Coordinating infrastructure services</td>
<td>Green taxes from degrading enterprises</td>
</tr>
<tr>
<td>Regional bio-spheres</td>
<td>Federating bio-regions</td>
<td>Coordinating economic structures in regional bio-spheres</td>
<td>Green taxes from bio-regions</td>
</tr>
<tr>
<td>Global</td>
<td>Governance of global commons</td>
<td>Coordinating political structures in regional bio-spheres</td>
<td>Green taxes from regional bio-spheres</td>
</tr>
</tbody>
</table>

(a) Roles allocated on the basis that no level of government should carry out any function, which is better undertaken at a lower level as per the ‘Principle of Subsidiary Function’ (Schumacher 1975: 203).

(b) Sources of funding based on the medieval cascade system of taxation where each level of government taxes the next lower level, which it represents. No taxes on individuals or the profits of enterprises.
Inefficiencies and Inequities of Capitalism - And how they can be reduced

Redistribution of income is achieved through the private sector from the democratic distribution of income producing assets and cross-subsidization through land bank rentals, property trades and provision of welfare services.

The establishment of local ecological currencies with ecological rules for owning firms through OTCs and realty through CLBs provides ways to plug the drains that invisibly suck out economic value from communities.

3.1 Ecological community currencies

The reasons why the existing nature of money and the financial system should not be replicated have been indicated in the previous Section. A community currency is not just required to plug economic leaks but to also establish a local unit of value that is defined by the natural endowment of the host bioregion. In this way the local environment can provide self-correcting price signals to maintain its sustainability that get lost with a national monopoly currency as discussed earlier and by Jacobs (1985: 156). Money redeemable into units of value of locally available services of nature will be described as “Green dollars”.

Table 2, Existing and Ecological Money outlines how green dollars contribute to building an ecological economy with quite different operating characteristics. Local Employment and Exchange Trading Systems (LETs) allows any person in a community to create and/or obtain credit. There has never been a need since money was invented for either governments or banks to create credit as set out in Table 2, row 1. Anybody can create credit. Hand written IOUs were used as hand-to-hand money in Sydney Town early in the 19th century before there was a printing press or the discovery of precious metals in the Colony (Butlin, 1953). Other parties also signing the notes would reinforce their creditability and acceptance3. Creditability can also be provided with acceptable third party guarantors. The guarantee fee would create a carrying cost as noted in rows 2 and seven of Table 2 hereafter notated as 2:2 and at 2:7.

Table 2, Existing and Ecological Money

<table>
<thead>
<tr>
<th>Difference between:</th>
<th>Existing money</th>
<th>Ecological money</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Money created by:</td>
<td>Government &amp; banks</td>
<td>Traders and investors</td>
</tr>
<tr>
<td>2 Interest rates fixed by:</td>
<td>Central Bank</td>
<td>Cost of risk insurance</td>
</tr>
<tr>
<td>3 Expansion of money:</td>
<td>Government ratios/regulation</td>
<td>Value of transactions</td>
</tr>
<tr>
<td>4 Money defined by:</td>
<td>Government fiat</td>
<td>Local resources of nature</td>
</tr>
<tr>
<td>5 Choice of currency</td>
<td>Government monopoly</td>
<td>Determined by community</td>
</tr>
<tr>
<td>6 Inflation control by:</td>
<td>‘Blunt’ policy instruments</td>
<td>Value of renewable energy</td>
</tr>
<tr>
<td>7 Structure of money:</td>
<td>Unlimited accrual of interest</td>
<td>Carrying cost limiting life</td>
</tr>
<tr>
<td>8 Economic flaw-1</td>
<td>Incentive to own money</td>
<td>Disincentive to hold money</td>
</tr>
<tr>
<td>9 Economic flaw-2</td>
<td>Allocates resources to finance</td>
<td>Real assets more attractive</td>
</tr>
<tr>
<td>10 Economic flaw-3</td>
<td>Distorts price relativities</td>
<td>Price related to sustainability</td>
</tr>
<tr>
<td>11 Environmental flaw-1</td>
<td>Incentive to burn carbon</td>
<td>Favors renewable energy</td>
</tr>
<tr>
<td>12 Environmental flaw-2</td>
<td>No feedback from nature</td>
<td>Nature controls price signals</td>
</tr>
<tr>
<td>13 Social flaw-1</td>
<td>Compounds unearned income</td>
<td>No unearned income</td>
</tr>
<tr>
<td>14 Social flaw-2</td>
<td>Concentrates influence</td>
<td>Localizes influence</td>
</tr>
<tr>
<td>15 Political flaw-1</td>
<td>Concentrates power</td>
<td>Enriches local democracy</td>
</tr>
</tbody>
</table>

Over the millenniums money has always been a product of nature that incurred a storage and/or insurance cost (2:2; 2:7). Cost carrying money reduces the resources absorbed by the financial system because it removes the incentive to invest in synthetic paper assets (2:8) rather than in the real economy (2:9; 2:11). In this way cost-carrying money paradoxically reduced the cost of the financial system whose purpose is to service the real economy.

Cost carrying money also improves equity as it removes the ability for money to make money from earning interest (2:13). Instead of capturing “unearned income” (Gesell 1919) an incentive is created to invest in “…processes by which society expands its power to make nature yield its resource more abundantly” (Moulton 1935: 12-13). In this way productivity is increased to reverse inflation while limiting the ability of the finance sector to act like a leech on the real economy.

3 This feature is used by electronic money described as “bitcoin” described at http://www.bitcoin.org/.
Inefficiencies and Inequities of Capitalism - And how they can be reduced

More importantly, procreative assets by their nature must become self-financing as they increase productivity and crucially they provide the ability for society to live more lightly on the planet by making “nature yield its resources more abundantly”. Investments in procreative assets provide the key to increasing prosperity without consuming more. In addition any one or more individuals who can obtain credit during their payback period can own procreative assets. The provision of credit insurance to cover the payback period provides a way to encourage the formation and wide distribution of the ownership of procreative assets to reduce inequalities and increase prosperity without growth. Various ways of providing selective credit insurance are described by Kelso & Hetter (1967: 102) and Turnbull (1975; 2006).

No living creature can exist without processing energy, so electricity generated from renewable resources provides a universal inflation proof unit of value (2:6). The relative value of the Kilo Watt-Hours (kWh) generated in each community could vary according to its endowment of renewable resources. But some sort of renewable energy is available throughout the world. As noted in 2:8 the role of money would be simplified to only being a unit of account and medium of exchange and not also a store of value.

Green dollars can be generated by anyone who invests in solar cells, wind farms, hydrogen producing bacteria or other sources of renewable energy. Ideally, mutually owned renewable generators would create the unit of reference value of a community. The generators would be financed by consumers buying their electricity in advance by accepting IOUs issued by the mutual association (that they would then own) to deliver specified kWh at specified future times (Turnbull 2008b). The IOUs would be negotiable to become the reserve green currency of the community. Ideally also, the local government body or Cooperative Land Bank (CLB) would require its rates to be paid in green dollars issued to finance the conversion of renewable energy into electricity. The local government body could then redeem its notes to pay for its street lighting and other energy requirements.

Privately issued cost carrying money described as ‘stamped scrip’ spontaneously and rapidly spread through Europe and the US during the Great Depression because it was so successful in stimulating local communities (Fisher 1933). The scrip was issued mainly by individual businesses in Europe but in the US it was mainly by the local chambers of commerce. The merchants would agree to accept the scrip presented by their customers. Each Tuesday night the notes became worthless unless the holder placed a stamp on the back equal to 2 per cent of the notes nominated value. In this way the issuer sold stamps over a year valued at 52 by 2 per cent being 104 per cent to allow the issuer to redeem the notes into official money and earn a 4 per cent gross margin. While the merchants would need to pay 2 per cent of the value of the notes they held on Tuesday evening, this is but a fraction of the cost of paying around 2 per cent on every transaction with a modern credit card.

3.2 Ecological corporations

All the seven sins of corporations identified in Section 2.2 can be ameliorated and/or removed by providing a relatively modest tax incentive for shareholders to convert existing corporations to OTCs (Turnbull 1975; 2000). The modest nature of the concession arises because investors discount money that they may obtain in the future twice. First they discount the value of future money because of the lost opportunity to earn

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Inefficiencies and Inequities of Capitalism - And how they can be reduced

interest and profits today. They then discount future values again to recognize the uncertainty of any values being recovered.

Equity investors are much more concerned about not losing the money they put at risk then the prospects of obtaining a return on their money invested. No matter what accountants may report, equity investors cannot make a profit until they have recovered all their investment placed at risk. The time required to recover their funds is described as the payback period. As the payback period gets longer the risk of loss gets bigger. The incentive for investors to vote at a shareholders meeting to convert existing corporations to OTCs in return for a tax concession is that they would obtain bigger, quicker profits with less risk. An analysis of the trade off between perpetual ownership and a tax incentive at various rates is provided in Turnbull (1975: Appendix; 2000; 2000).

No change in company law is required to create OTCs. Only a change in the tax laws to make it attractive for investors to change corporate constitutions to create a class of stakeholder shares. The stakeholder shares would automatically acquire the rights of the investor shares over say 20 years. Patents have a similar life to create a more level playing field for investors. The gradual transfer of corporate ownership and control to stakeholders would provide a basis for introducing a comprehensive form of network governance (Turnbull 2000; 2001a; 2002). The transfer would also provide a compelling incentive for all profits to be distributed as dividends rather than being re-invested. OTCs would sustain their operations and grow by establishing “offspring” firms from dividend re-investment plans and perhaps augmented by issues to new shareholders.

Stakeholder shares would be issued without cost to residential individuals of the host community. In this way OTCs could become locally owned and controlled to eliminate the draining out of the community profits that Penrose (1956: 79) described as ‘unknown, unlimited and uncontrollable’. It makes operational sense to first include those individuals who can make a direct contribution to the success of the firm according to their contributions. This would involve its suppliers, employees or customers or individuals employed by suppliers and customers.

Besides being more economically efficient by limiting the export of surplus profits OTCs distribute wealth according to the contributions of its stakeholders. Stakeholder ownership and their representative councils would be controlled on a one vote per person basis with firms becoming accountable to their host community. Firms would not become too big to fail because all profits would be distributed each year like a cooperative.

Firms could grow by establishing offspring corporations taking over some of their assets. This was achieved in Europe and the US in the 18th century when the life of unincorporated companies was limited requiring the cyclic recapitalisation of the business. The offspring firms would be funded with dividends from their progenitor corporation and/or from other sources. An important consequence would be that the decision to fund expansion and/or continuation of a business would transfer from executives to shareholders and other investors. Firms would then follow the example of living things that evolve and adapt through decay and rebirth.

This would also improve the efficiency of the capital markets, as shareholders, not managers would undertake re-investment decisions. Shareholders are not conflicted by being involved in the use of the funds and have more diversified investment options than managers. The result would be the creation of many smaller firms to improve competition, social and political accountability with the features indicated in Table 3, Existing and Ecological Corporations. According to a former Australian Treasurer and Deputy Prime Minister who had a PhD in economics, it would also improve management of the economy (Cairns 1976).

To sum up, ecological corporations would introduce a dozen other profound benefits from: (1) Reducing the inefficiency and (2) inequity of capitalism that allows investors to be overpaid with profits that are surplus to providing the incentive to invest. (3) Avoiding corporations becoming too big to fail as firms obtain an incentive to distribute all profits; (4) Allowing market forces to allocate corporate resources more efficiently through dividend reinvestment in offspring firms and/or cyclic recapitalizations instead of relying on a very imperfect market for corporate control through takeovers; (5) Establishing many more smaller firms with less market power to improve competition in providing goods and services; (6) Reducing the economic and political power of corporations that can undermine democracy; (7) Reducing taxes, welfare and the size of government; (8) Reducing alien disconnected capitalism by increasing local ownership with strategic stakeholder engagement; (9) Facilitating protection of the host environment of firms through greater local control; (10) Introducing “boomerang” ownership to attract more foreign investment with more local
Inefficiencies and Inequities of Capitalism - And how they can be reduced

ownership long term; (11) Furthering the financial independence of local communities and so (12) providing environmentally sustainable prosperity even without growth.

Table 3, Existing and Ecological Corporations

<table>
<thead>
<tr>
<th>Features</th>
<th>Existing Corporations</th>
<th>Ecological Corporations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Right to exist:</td>
<td>Perpetual</td>
<td>Limited to 20 years like patents</td>
</tr>
<tr>
<td>2 Type of ownership:</td>
<td>Static and monopoly</td>
<td>Dynamic and co-ownership</td>
</tr>
<tr>
<td>3 Owners</td>
<td>Located anywhere</td>
<td>Mainly local</td>
</tr>
<tr>
<td>4 Creation of corporations</td>
<td>Entrepreneurs &amp; investors</td>
<td>Entrepreneurs, investors and mature</td>
</tr>
<tr>
<td></td>
<td></td>
<td>fecund corporations</td>
</tr>
<tr>
<td>5 Size of corporations</td>
<td>No inherent limit</td>
<td>Limited by investor’s short-term</td>
</tr>
<tr>
<td></td>
<td></td>
<td>return of and on investment.</td>
</tr>
<tr>
<td>6 Number</td>
<td>As at present</td>
<td>Many more smaller corporations</td>
</tr>
<tr>
<td>7 Governance by:</td>
<td>Shareholders in theory but in practice</td>
<td>Competitively and dynamically</td>
</tr>
<tr>
<td></td>
<td>by directors</td>
<td>determined by stakeholders</td>
</tr>
<tr>
<td>8 Regulation by:</td>
<td>By government</td>
<td>By stakeholders and so by local</td>
</tr>
<tr>
<td></td>
<td></td>
<td>requirements</td>
</tr>
</tbody>
</table>

3.3 Self-financing urban communities

This Section describes how communities can efficiently restrict the leakage out of value from their community to alien parties through rents, interest, profits and/or capital gains. To achieve these objectives the title deed to land needs to be separated from the title deed to structures over the land (Turnbull 2007) to create a CLB.

Combing the ownership values created in land with the ownership values of buildings creates both inefficiency and inequities because parties providing essential services enhance the value of the land/sites they service but do not share in the uplift in values they create. As a result landowners capture unearned windfall gains generated by the investment by others such as the government who finance the roads, water, sewerage, schools and hospitals and the private sector providing shopping facilities, places or work, amusement and recreation.

Efficiency and equity can be achieved by all buildings being privately owned with all sites on which they are built being owned mutually by all citizens residing in the community with a sufficiently large population to support a number of secondary schools and places of significant employment. In this way sufficient windfall gains created by urban development can be captured by the mutually owned CLB with sufficient rental income for it to become self-financing. As the cost of land is typically halve the cost of a dwelling, this arrangement eliminates the cost of land for pioneer homeowners to half the cost of acquiring a house. It also makes more attractive commercial investment in rental housing, office buildings and shopping facilities as the land cost is also eliminated for them.

All homeowners and tenants obtain one share in the CLB for each square meter of the site they occupy. As only residents can own shares, no non-residents or commercial investors can capture any uplift in land values created by the community to extract value from the community. As residents typically only occupy around 20 per cent of the land area in an urban precinct, the area of land in which residents obtain an ownership interest through the CLB becomes five times greater than a homeowner with a conventional unitary title.

Homeowners can finance and sell their dwellings in the usual way. However, for the buyer to obtain title to the house she/he must buy at market value the CLB shares held by the vendors that are redeemed by the CLB and resold to the buyer. The redemption price discount reduces from 100 per cent to zero over the time required to write off the dwelling for accounting purposes. The profit obtained by the CLB in redeeming its shares and reselling them provides another source of income to allow the CLB to become self-financing.

Because the CLB becomes self-financing, its shares can be gifted to pioneer homebuyers. As investors cannot acquire CLB shares, tenants in rental properties can likewise be gifted shares over the period the rental properties are written off by their owners for accounting purposes. Tenants acquire co-ownership rights to rental properties without cost at the same rate that the property is written off. This does not reduce the reported rate of return for investors. As co-owners tenants have an incentive to undertake repair and maintenance to increase the return of investors who already obtain higher returns by not needing to buy land.
Inefficiencies and Inequities of Capitalism - And how they can be reduced

CLBs capture the surplus profits by becoming owners of all commercial developments except rental housing. As CLB provides a way to provide a minimum social dividend to all residents as every resident must become a shareholder. Residents involved as stakeholders from being suppliers, workers and/or consumers of local enterprises would also obtain additional income from acquiring without cost stakeholder shares as described in Section 3.2. It is by this means that national income can be equitably distributed to all citizens without work or welfare.

The provision of a minimum income to all residents of all generations resident in a CLB means that provision for pensions are no longer be required. This would improve the level of prosperity without growth, as individuals would no longer need to forgo consumption to finance a private pension or contribute to a public pension and medical insurance. As CLBs have a comprehensive integrated involvement in all aspect of community life at the neighborhood level, they are well place to initiate preventive medical care and mobilize the unemployed in self-help and community care activities – refer to row four in Table 1.

The type of society that could result from introducing ecology ownership and control of money, firms and realty are considered in the next concluding Section.

4. Building Sustainable Communities

The type of society that would emerge by introducing ecological property rights to money, firms and realty is outlined in Table 4 History and vision of a transforming society. The changes required to create a stable state more efficient and equitable resilient society with built-in feedback messages from its host environment are less than the changes achieved from the past. However, the time for achieving the changes needs to be very much shorter (Turnbull 2011).

One of the results of introducing network governance within and between organizations is the decomposition of decision-making labor to allow people with little specialized knowledge or experience to make decisions. Life and death decisions in a number of societies have been made by randomly selected people to form a jury to sit in judgment of people charged with murder. Random selection of qualified decision makers was an important element of Athenian democracy and in the governance of medieval cities of Italy (Burnheim 1985). Electing decision makers raises the problem of rich vested interests using their resources to support and/or buy votes of candidates who undertake to make decisions to further the enrichment of those already rich. Political democracies that elect representatives create an inbuilt bias for the rich to get richer.

Network governance makes it practical to introduce an alternative to electoral politics (Martin 2001). The selection of decision makers by lot instead of votes is described as “demarchy” (Burnheim 1985) - refer to the last row in Table 4. Some elements of demarchy are practiced in a number of employee owned enterprises such as the MCC. The key to the constructive implementation of demarchy is for only appropriately qualified individuals to be available for selection. The processes of filtering individuals according to their abilities is, in any event, typical of many pre-selection process in democracies based on political parties.

Another way of distributing political power, influence and wealth is through the rotation of office bearers. The city leader of ancient Athens was rotated each month with a representative from the various suburbs. A practice adopted today by the European Union who rotate the Presidency every six months with leaders from their member states. To provide continuity each Presidency is shared among three member states over one and half years.

In considering how to design the governance architecture of society, scholars have identified six coordinating mechanisms (Hollingsworth 2002). Each has strengths and weaknesses but each can be used in various combinations as found in various societies over history as indicated by Turnbull (2001b: 276-7).

In addition, governance architects need to consider the criteria and design concepts embedded in nature. How and why the architecture of nature provides a compelling model for designing an equitable, efficient and sustainable society is presented in Turnbull (2010a). A contribution of this paper is to identify how this can be achieved by introducing ecological property rights and ecological governance.

The consumption of non-renewable resources is likely to seriously exacerbate the problems of achieving sustainable society with a good life. Reduced consumption may well be forced upon society. Trainer (1985; 2010a, b, c) anticipates this possibility with his compelling arguments for adopting a much more frugal lifestyle rather than a “good life”. The possibility of achieving a “good life” in the future may only become possible with a much smaller global population.
Inefficiencies and Inequities of Capitalism - And how they can be reduced

Table 4. History and vision of a transforming society

<table>
<thead>
<tr>
<th>Features</th>
<th>Past society</th>
<th>Present society</th>
<th>Future society</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 People treated as</td>
<td>Property</td>
<td>Resource</td>
<td>Potential &amp; entitled</td>
</tr>
<tr>
<td>2 Role of women</td>
<td>Breeding</td>
<td>Cheap labor</td>
<td>Gender partnership</td>
</tr>
<tr>
<td>3 Purpose of work</td>
<td>Sustenance</td>
<td>Income distribution</td>
<td>Fulfillment</td>
</tr>
<tr>
<td>4 Sources of income</td>
<td>Work</td>
<td>Work or welfare</td>
<td>Work, social/cash dividends</td>
</tr>
<tr>
<td>5 Environment</td>
<td>Subservient</td>
<td>Dominant</td>
<td>Stewardship</td>
</tr>
<tr>
<td>6 Natural resources</td>
<td>Use</td>
<td>Exploit</td>
<td>Sustain</td>
</tr>
<tr>
<td>7 Source of land acquisition</td>
<td>Conquest or inheritance</td>
<td>Purchase or inheritance</td>
<td>Use – and so time limited as in squatter settlements</td>
</tr>
<tr>
<td>8 Land ownership</td>
<td>Through occupancy</td>
<td>Perpetual</td>
<td>Time of use &amp; so limited</td>
</tr>
<tr>
<td>9 Firm ownership</td>
<td>Start up or inheritance</td>
<td>Purchase/start up &amp; inheritance</td>
<td>Start up, investment and stakeholder entitlements</td>
</tr>
<tr>
<td>10 Business owners</td>
<td>Proprietors</td>
<td>Shareholders</td>
<td>And contingent shareholders</td>
</tr>
<tr>
<td>11 Ownership period</td>
<td>Life of owner</td>
<td>Perpetual</td>
<td>Limited</td>
</tr>
<tr>
<td>12 Property rights</td>
<td>Discretion of Sovereign</td>
<td>Static, monopoly and perpetual</td>
<td>Dynamic co-ownership and time limited</td>
</tr>
<tr>
<td>13 Structure of business</td>
<td>Paternal and centralized</td>
<td>Hierarchic and centralized</td>
<td>Nested networks of almost self-governing units/holons</td>
</tr>
<tr>
<td>14 Monopolies</td>
<td>Granted to private interests by rulers</td>
<td>Banned or government control</td>
<td>Removed by time limited dynamic property rights</td>
</tr>
<tr>
<td>15 Market structure</td>
<td>Local relationships</td>
<td>Global &amp; bias to scale</td>
<td>Bias to local relationships</td>
</tr>
<tr>
<td>16 Institutions</td>
<td>Perpetual</td>
<td>And too big to fail</td>
<td>Dynamic and time limited</td>
</tr>
<tr>
<td>17 Basis of money</td>
<td>Commodities</td>
<td>Artificial construct</td>
<td>Services of nature</td>
</tr>
<tr>
<td>18 Creation of money</td>
<td>Decentralized in private sector</td>
<td>Government controlled</td>
<td>Decentralized competitive private sector non-banks</td>
</tr>
<tr>
<td>19 Cost of money</td>
<td>Storage &amp; testing</td>
<td>Interest</td>
<td>Cost of risk insurance</td>
</tr>
<tr>
<td>20 Allocation of resources</td>
<td>Command &amp; control</td>
<td>Biased markets from flat money pricing</td>
<td>Family, benevolence, semiotics &amp; markets</td>
</tr>
<tr>
<td>21 Value system</td>
<td>Absolute</td>
<td>Materialistic</td>
<td>Humanistic</td>
</tr>
<tr>
<td>22 Wealth distribution</td>
<td>Autarchic</td>
<td>Biased market forces</td>
<td>As to contribution &amp; need</td>
</tr>
<tr>
<td>23 Accumulation of economic value</td>
<td>Limited by political power</td>
<td>Not limited</td>
<td>Limited by time &amp; dynamic rights</td>
</tr>
<tr>
<td>24 Political power</td>
<td>Centralized in ruler</td>
<td>Gov. &amp; big business</td>
<td>Individuals in communities</td>
</tr>
<tr>
<td>25 Source of power</td>
<td>Inherited, physical</td>
<td>Democracy</td>
<td>Holonic by lot (demarchy)</td>
</tr>
</tbody>
</table>

As the limits of non-renewable resources become widely acknowledged, a political mandate could arise to encourage both de-population and de-growth. Ecological capitalism could assist in making de-population and de-growth political acceptable sooner than later. It is in this way that this Paper could expedite the changes required for achieving environmental sustainability with prosperity. It would result in a society where policies of full employment would be replaced with policies of fulfillment in employment and/or leisure.

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Inefficiencies and Inequities of Capitalism - And how they can be reduced


