AN INTEREST-FREE FINANCIAL SYSTEM:

VIABLE ALTERNATIVE OR RELIGIOUS PIPE-DREAM?

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1. INTRODUCTION

The ban on interest is well-attested in the Scriptures of the Judeo-Christian and Islamic traditions [1]. Yet in the societies influenced by these writings, the idea is usually greeted with either scorn or derision by 'men of the world', in whose ranks most economists count themselves. "Financial capital is, after all, in short supply - it needs a positive price to reflect its scarcity. Abolishing interest might find a place in the dreams of religious idealists but it could never work in the real world."

This attitude is understandable. Religiously-motivated usury laws have had a poor record in economic history. Communist societies have wished away the existence of interest for ideological reasons and have paid the allocational price. Some Islamic banks have eliminated interest, only to replace it largely with mark-up finance which seems little different in practice. No fully worked out model of an interest-free economy exists in theory, let alone practice. It is not surprising that the possibility of an interest-free financial system receives little attention within Western economics.

This paper will attempt to redress the balance somewhat by outlining what an interest-free economy could look like, with possible alternatives to mortgages, government bonds and consumer credit. Some of the more commonly-raised objections will then be discussed (and hopefully answered) but the, as yet, unsolved theoretical problems of such a system will be raised. The experience of Islamic banks, Iran and Pakistan in applying variants of non-interest finance in the past fifteen years will then be discussed.

Much of the preceding modern work in this field has been Islamic in origin, since this is the only school of thought giving serious consideration to non-interest economics. As a Christian I try to distinguish the analysis of interst-free finance from its Islamic roots. However, there is little religiously-inspired disagreement in this area because the Qu'ranic condemnation of interest was probably prompted by that of the Old Testament and the Medieval scholastic advocacy of an interest-free financial system bears striking similarity to that of Islamic economics.

2. WHAT WOULD AN INTEREST-FREE FINANCIAL SYSTEM LOOK LIKE?

The prohibition of interest has not generally been interpreted as requiring the abolition of all returns on financial capital. Rather, a middle way has been sought between unrestricted capitalism, which allows any return on monetary assets to be charged if there are people willing to pay, and Marxist socialism, which classifies interest and rent as confiscated surplus value along with profit [2]. Instead of restricting the level of the return paid on monetary assets, as a usury law attempts to do, interest-free finance restricts the form that the return on monetary assets can take. Primarily, instead of allowing the charging of an interest rate unrelated to the fortunes of the borrower, scholastic and Islamic economists advocate the sharing of profit-or-loss on the basis of a partnership between financial supplier and entrepreneur or business. This arrangement could either take the form of ordinary shares or one where the profits are divided between the two parties in accordance with a pre-arranged ratio, with any losses being subtracted from the original financial contribution. Such partnership forms are usually on a limited liability basis so that the managerial partner cannot commit more funds than are originally provided, unless they make a capital contribution themselves. If there are multiple suppliers of capital, they must share the profit-or-loss in proportion to the relative share of the finance they have provided.

This concern with the association of the return on money with the profitability of its use is an ethical one. The aspect of interest that is seen to be unfair is that financial capital makes a positive return irrespective of whether the borrower has managed to use the money productively or not. The charging of interest implicitly assumes that there are certain profits to be made that will always be sufficient to cover the debt service charges - an assumption that is patently false in the uncertain world of real investment. The risk involved in the transaction is borne largely by the borrower, particularly when the lender has specified collateral for the loan. Hence, interest is condemned for embodying a presumptuous assumption about the real world, where uncertainty is rife, and for loading all of the risk of the transaction upon the borrower. The profit-related return to the financial supplier is regarded as a reward for bearing the risk of loss.

This is the most radical element of non-interest economics - all finance supplied to the productive process must be rewarded on a return-related basis. If such a calculation cannot be made for a money capital contribution, then it can only be lent interest-free. However, the implications of such a position are not as profound as one might imagine because this ruling is only believed to apply to money capital and not real goods. Both Medieval and Islamic jurists do not regard the charging of rent for the use of property as coming under the same condemnation as interest. Hire charges are justified on the basis of the lessor foregoing the use of their property and incurring the risk of its destruction or depreciation. These considerations are not believed to apply in case of the 'hire' of money at interest because the borrower does not enjoy the benefits of the money throughout the 'rental' period since it has been spent at the outset of the loan. Hence, an interest-free system would not restrict the intertemporal transfer of

consumption services, so long as this was achieved through the transfer of goods rather than by money. Loans of money at interest would be eliminated but their place could be at least partly filled by leasing, rental, hire and hire purchase agreements [3]. In addition, Islamic law allows - but does not recommend - the provision of mark-up finance for trading purposes and the forward purchasing of production on condition that the lender takes possession of the goods involved and so incurs the risk of transportation and depreciation.

3. WHAT WOULD AN INTEREST-FREE BANK LOOK LIKE?

The attack on interest has sometimes been associated with a criticism of bank power. Whilst the existence of interest may facilitate the concentration of economic power into a few hands, the elimination of financial intermediation is not an automatic corollary of the removal of interest. The possible form that an interest-free bank might take has been the main preoccupation of non-interest economics for some time, and the model developed provides an effective contrast to that of the conventional bank.

On the liabilities side, current accounts could be offered, providing transactions services only. These accounts would provide no return to the depositor but would have a guaranteed nominal value with instant access. Bank services, such as foreign exchange transactions and safety deposit facilities, would incur charges in the normal manner. The holding of such an account could provide access to interest-free overdrafts rationed on the basis of the size and duration of previous deposits [4].

The principal issue at stake is whether the bank should be allowed to use its funds derived from current accounts in its investment activities. If this is done, as in conventional private banks, the returns made with such funds can be used to subsidise the costs of providing a transactions network so that the bank would not have to charge for the clearing of cheques, for instance. Although the law of large numbers allows banks to on-lend transactions deposits, the practice of fractional reserve banking makes the transactions mechanism of an economy vulnerable to bank losses on its investment portfolio and makes the control of the money supply extremely difficult for the central bank to achieve.

Consequently, some proponents of interest-free banking argue that the reform should be more radical and ensure 100% reserve banking [5]. Under such a scheme, a strong distinction would be made between transactions and investment deposits. No return would be paid on current accounts but their nominal value would be guaranteed by the bank holding complete reserves in the form of cash or balances with the central bank. Costs of running the transactions mechanism would have to be charged to the user in full. Meanwhile, the investment deposits offered by the bank would offer a share of the profit (or loss) made by the bank on its portfolio of investments as a dividend. The nominal value of deposits would not be guaranteed but vary with the underlying profitability of the bank's investments, as with a unit trust. The bank could offer a variety of risk-return combinations by varying the profit share on offer with the liquidity

of the deposit (in terms of notice of withdrawal conditions), or offering more or less diversified portfolios. In effect, these non-interest proposals would convert banks into a separate transactions mechanism and an investment intermediary, rather than the hybrid that conventional banks have become. This reform would prove costly in that the transactions mechanism would no longer be cross-subsidized by the on-lending of such deposits. Such costs would be offset by the benefits of a safer transactions mechanism (without the need for the distortions of deposit insurance), easier control of thr money supply and a banking system more willing to invest in risky, long-term projects.

On the asset side of an interest-free bank's operations, its share capital and investment deposits could be held in any form of asset whose expected return is not classified as 'interest'. The most obvious candidates are profit-share partnerships with businesses, net crop-share arrangements with farmers and equities in private firms or public projects. The more 'dubious' non-interest assets would include capital equipment for leasing purposes, rented property and hire purchase arrangements. Whilst the Islamic tradition justifies rental, hire and leasing charges on the grounds of risk of loss and depreciation, theorists are always more comfortable with advocating financial instruments that directly relate the return on the asset to the return from its use.

Given this switch of bank portfolios away from fixed to return-related assets, Islamic economists suggest that two things will happen. First, a bank will attempt to invest in projects with the highest expected profitability since it will receive a direct share of this return, and will face competitive pressure for deposits from other financial intermediaries with the same incentive. This contrasts with interest-based banks who are primarily concerned with the safety of the project's cash-flow, (so as to meet debt service payments), and the size and security of the loan collateral offered. Interest-free banks should, therefore, be characterized by holding assets with a higher risk-return profile than conventional banks. Second, the supposed property of the rate of interest to bring about equality between savings and investment would be replaced by movements in profit-share ratios. If a net shortage in the supply of capital was experienced, the profit-share received by capital suppliers in new partnership contacts would rise. Conversely, a net shortage of outlets for financial capital would provoke a fall in the ratio. These somewhat rudimentary observations have prompted some Islamic economists to believe that a non-interest system would possess better, or at least no worse, allocative properties than one with interest.

4. INTEREST-FREE ALTERNATIVES TO CONSUMPTION LOANS

An approximate distinction can be made between loans demanded to finance productive ventures and loans motivated by the need to shift the intertemporal pattern of resource use. In an interest-based system, these loan demands can be aggregated and charged the same price - a percentage rate of return per unit time. Whilst an interest-free system can share profit or loss when finance is supplied for productive projects, it faces greater difficulties in accomodating the

desire to transfer consumption between time periods. Islamic analysts have tackled the problem by first, questioning the need for intertemporal transfer at all, and second, showing how such transfer could nevertheless be effected in a non-interest context.

For instance, consumer credit is condemned for its acting as an inducement for people to consume more than they can afford, for the redistribution of wealth from the rich to the poor it facilitates and the ensuing misery of those overcommitted borrowers facing personal bankruptcy. Easy credit is seen as a cause of inflation, a contributory factor in the volatility of consumption demand and as an encouragement to a materialistic outlook. Nevertheless, the need to bring forward the consumption of certain goods is sometimes recognised as being legitimate, particularly in the case of the consumption of necessities by the poor. Hence, it is suggested that interest-free loan funds should be available to the poor (financed by private or public donations and administered by banks, charities or local government), whilst those with bank transaction accounts could have access to interest-free overdrafts (see note 4). Alternatively, given the acceptibility of rental charges, the renting or hire purchase of consumer durables would still be possible. Although the financial cost of an H.P. agreement may not differ greatly from that of a consumption loan at interest, the borrower should face less chance of serious repayment difficulties since the durable involved can be surrendered.

A similar analysis is made of interest-bearing mortgages on property. Such loans are condemned for their encouraging the over-consumption of housing services, for exacerbating the volatility of house prices and construction and separating the costs paid for home-ownership from the underlying conditions of the housing market. However, it is recognised that owning some or part of one's property is a legitimate desire and that this cannot usually be achieved without some form of loan at the beginning of one's working life. Again, the hire purchase form of contract could be adapted so that the occupier can rent a property and gradually accumulate equity by paying over the rent charge without being committed, a priori, to eventually achieving 100% ownership. Alternatively, a suggestion has been made to link the repayments of the mortgage to a ratio of the borrower's salary [6]. For instance, the borrowers could commit themselves to pay 15% of all pre-tax income for 25 years as payment for their properties. (Obviously, this ratio would be variable according to the initial value of the property, the income of the borrower and the period of repayment.)

Greater difficulty is faced when devising alternatives for interest-bearing government debt, however. Again, the problems caused by the ability of governments to bring forward the timing of consumption are highlighted. National debts represent a burden of taxation shifted onto future generations who, by the nature of things, cannot be consulted in the decision-making process. Also, government borrowing facilitates the conduct of warfare since the immediate costs can be postponed, rather than borne by the generation engaged in the fighting, through higher taxes or inflation. When governments wish to finance return-bearing projects, the floating of equities or profit-share lending would be available in an interest-free system. However, no such

arrangements are possible when the administration wishes to shift the current tax burden onto future generations or invest in projects with non-pecuniary returns (eg. education). In these circumstances, a balanced budget option is the only one available.

Finally, some difficulty in replacing interest is experienced in the field of short-term trade finance, where it is not possible to calculate the exact return made with the borrowed funds. Again, non-interest analysts question the need for much of what passes as trade finance. An overdraft facility in continuous use, for instance, suggests a shortfall in business equity capital rather than a recurrent demand for trade finance. However, trade finance can still be supplied in a non-interest context by imputing the firm's overall level of profitability for profit-share purposes or supplying trade loans on a 'mark-up' basis. This last method has become very popular with Islamic banks currently in operation as it provides a licit return on funds without the need for risky, long-term investments. Islamic jurists justify the practice on condition that the mark-up charged is unrelated to the duration of the transaction and that the finance supplier takes legal possession of the goods concerned when in transit, hence having some exposure to risk. However, mark-up finance differs very little from interest-bearing trade loans in practice, especially since the mark-up charged is often closely linked to LIBOR! A less dubious replacement would be for a non-interest bank to extend interest-free overdraft facilities to its profit-share business borrowers, knowing that this will result in a higher return to the bank via the profit-share mechanism.

5. COMMON OBJECTIONS ANSWERED

a. If interest is abolished, no-one would have a motive to save.

The obvious objection to the initial concept of interest-free finance is that, if there is to be no reward for abstinence, then the savings ratio will plummet, since such a return is necessary to overcome universal time preference. Such thinking is easily rebuffed. There are many more motives for saving than to receive a return, so positive time preference is not omnipresent. Savings are accumulated to smooth consumption patterns over the life cycle, to insure against unforeseen emergencies and to accumulate large estates for bequest purposes. These motives indicate that the savings ratio could rise with a decline in the return as income effects outweigh substitution effects. However, as should now be clear, religiously-inspired proposals for a non-interest financial system do not argue for the abolition of a return on savings, but its transformation into one that shares risk with the borrower in an explicit manner.

b. The savings ratio will be depressed by the return being more risky.

Given that the return on savings is not to be eliminated but transformed to a risk sharing basis, the greater variability of return might be expected to reduce aggregate savings levels. This will, of course, be the case with risk averse savers anxious about their return and ready to switch from saving to consumption. This objection can also be answered on several levels. If

savers have a target level of wealth or income from savings, then greater variability of return will prompt greater levels of savings as savers wish to be more confident of achieving their targets. In addition, the return from an interest-free bank may not be that more variable than that from an interest-based competitor since it will use standard pooling techniques to diversify its portfolio risk and reserves to smooth the volatility of the returns it pays to investors. An interest-based bank offers a variable nominal rate of return, the real return from which is made even more unpredictable by a variable inflation rate. Given that the returns from a non-interest bank could be more closely linked to prevailing inflation rates (see below), a non-interest system could yield a more stable real return in any case.

c. How can an interest-free system cope with inflation?

An interest-free system is often accused of penalising depositors who live in an inflation-prone economy where the purchasing power of savings is being continuously eroded. Surely such circumstances warrant the indexation of savings to ensure a positive real return to saving? Without entering into the indexation debate, it must be pointed out that the return on investment projects in a PLS bank should be positively related to the movement in the price level since it would be largely derived from profit-related investments. Given the likelihood that the level of profits is positively related to the price level, particularly in times of demand-pull inflation, the protection of the real value of investment deposits should be no worse than under the present system. To this must be added for consideration the greater potential for direct control of the monetary base that 100% reserve banking should bestow upon the central bank, and the relative switch of funds away from consumer credit and loans for speculation that the introduction of non-interest banking should engender. The resulting financial system should, if anything, be less prone to inflation than its interest-based counterpart.

d. Profit-share lending will be extremely vulnerable to moral hazard problems.

A major advantage of interest-based lending is that it conserves on information requirements. The return to the lender is dependent only on a rate per unit time. With PLS or equity-based finance, the lender needs to discover the profitability or otherwise or the project financed in order to calculate the return to capital. This requirement produces great potential for the lender to suffer from moral hazard problems. For instance, the borrower has an automatic incentive to under-report profit or conceal it by investing in non-pecuniary benefits. Also, where the borrower has discretion as to his or her level of effort which is imperfectly monitored by the lender (eg. an owner-manager or crop-share farmer), a PLS arrangement will act as a disincentive to work effort since part of the rewards to marginal effort will be taken by the lender.

These incentives engendered by profit-share arrangements will result in extra information-gathering costs for the lender. Careful scrutiny of the borrower's accounts will have to be made

whilst each borrower will have to be closely monitored in order to be sure that reported profit is an accurate assessment of the real state of affairs and that the borrower is not over-consuming perquisites. Even so, monitoring is costly and imperfect and the financial principal-agent literature predicts that such arrangaements will still be vulnerable to moral hazard. The problem is ameliorated to a significant extent, however, by the realisation that provision of finance is rarely a one-period affair but rather that the borrower-lender relationship is usually long-lived due to the sunk costs of information-gathering on both sides. As soon as the PLS system is placed in a multi-period context, exposure of the lender to moral hazard is lessened. If the borrower reports low levels of profitability relative to the sector average through inefficiency, deceit, lack of effort or excessive perquisites then the lender can concentrate monitoring efforts, withdraw funding in future periods or worsen the terms of such finance (eg. through a higher bank profit-share ratio or restriction of overdraft facilities). Conversely, the bank can offer inducements to firms to report high profits in the form of more finance in the future at easier terms for its most valued borrowers. These considerations will not eliminate the higher information-gathering costs of a non-interest system but should maintain its feasibility.

e. How can resources be efficiently allocated over time without a discount factor?

One of the most important uses of an interest rate structure is that of providing appropriate discount factors for future cash-flows in project appraisal. Without such readily available discount factors, how can efficient decision-making be effected? Of the usual justifications given for the discounting of future benefits to make them comparable to current values, only that of opportunity cost stands up to rigourous logical and ethical scrutiny [7]. If alternative uses of funds are available and likely to yield a return over time, then there seems little wrong in discounting future expected returns by the relevant opportunity cost. Indeed, if this is not done then inefficient investment decisions will result. With future returns being uncertain by their very nature, the standard result of the theory of investment appraisal under uncertainty is that the appropriate discount factor for a firm is its average cost of equity capital. Hence, a non-interest system should have no problem in supplying the appropriate discount factors for project appraisal since a borrower's average cost of equity or profit-related capital should be readily available.

6. UNSOLVED PROBLEMS

Non-interest financial theory has developed responses to some of the preliminary objections raised to the replacement of interest with profit-share finance. However, searching questions as to the theoretical desirability and practical feasibility of the concept remain, even to those with the eye of faith. For instance, a PLS banking system would rely heavily upon a standardised and uncorrupt auditing system to establish fair profit or loss statements, and yet in many economies such systems do not exist and, even where they do, it is to be doubted whether

audits can ever truly reflect the financial position of an uncooperative borrower. Similar prerequisites of a non-interest system include widely recognised property rights upheld by a fair judiciary and a well-established equity market to provide PLS banks a source of liquid, return-bearing assets. Without these institutions, a PLS bank is likely to be highly risk averse in its investment strategy. Unfortunately, it is in LDCs, where the risk-sharing benefits of interest-free finance would be most beneficial, that these prerequisites obtain least.

Profit-share finance will also face adverse selection problems when in competition with interest-based lenders. Since a borrower's expected cost of capital will be dependent upon declared profitability, a non-interest bank is likely to attract borrower's with projects that have high non-pecuniary benefits to the borrower relative to declared profits, and borrowers who know their projects to be highly risky. Borrowers who feel confident of a high return, and those with projects with high profits relative to perquisites will prefer to use debt finance since it offers a lower expected cost of capital. Accumulation of expertise in project appraisal will ameliorate but not eliminate these adverse selection problems for non-interest banks. This difficulty has the potential to make PLS banking feasible only when interest-based finance is not available. Not only would a domestic prohibition of interest be required but exchange controls might also be necessary to prevent borrowing at interest from abroad.

A non-interest system also fails to achieve some of its initial goals through the dictates of practicality. Whilst Islamic theorists uphold the profit-relation of financial reward, by allowing rent and mark-up into the system, virtually risk-free return-bearing assets persist, enabling owners of finance to receive rewards unrelated to the productivity of real capital. The supposed benefits of eliminating such assets will not be achieved. In addition, a non-interest financial system would be distorted by the persistence of an interest-bearing risk-free asset, and yet no obvious solution exists to eliminating accumulated government debts in a short period. Defaulting on such commitments would be seen as immoral, whereas monetizing the debt would produce rapid inflation. The only solution seems to be the running of significant budget surpluses for a long period in which a non-interest system could not technically live up to its name.

7. ISLAMIC EXPERIENCE OF NON-INTEREST BANKING

Despite these problems being fairly obvious and there being no fully worked-out model of an interest-free financial system in existence, large experiments with Islamic banking were proceeded with from the mid-1970s onwards. Such banks now operate in over 50 countries, usually those with large Muslim populations, whilst Pakistan and Iran converted their whole banking networks to non-interest operations in the early 1980s.

Whilst experience has differed between individual institutions and across countries, a fairly common pattern has emerged across non-interest banks. On the deposit side, initial growth has often been rapid as devout Muslims have seized the opportunity of banking with avowedly

Islamic institutions with the potential of receiving a competitive return on their deposits without involving the stigma of interest. Although deposit growth usually decelerates as the novelty wears off, the deposit base has often been maintained due to the returns on offer being competitive with those upon interest-bearing deposits. The result is that in many Muslim economies, such as Egypt, Kuwait, Jordan and Malaysia, non-interest banks account for approximately 15-20% of retail deposits.

On the assets side, however, the experience has not been altogether what the theoreticians might have desired. Islamic banks have become involved in some long-term PLS projects in manufacturing and infrastructure, but the vast preponderance of loans has taken the form of mark-up trade finance. This is the result of a multitude of factors. Unfamiliarity with PLS contracts has meant that there has not been a great deal of demand for such funds, whereas the similiarities between interest and mark-up finance has meant the latter being more immediately acceptable to businessmen. The banks have been willing to supply such funds because they are relatively profitable whilst being liquid - an important factor for newly-fledged institutions wanting to build a reputation for reliability. When in competition with interest-based banks, such considerations possess added significance, especially when return-bearing liquid assets, in the form of government debt, are inadmissible. Conventional banks usually have the additional advantages of deposit insurance and interest payments of corporate borrowers being tax deductible, unlike PLS payments and dividends. Hence, the short-termism of Islamic banks is understandable given the competitive climate.

This excuse cannot be made for the nationalised Islamic banks of Pakistan and Iran who face no domestic conventional competition, however. Here again, deposit growth and returns have been respectable when compared with the pre-reform, interest-based performance but assets held have tended to be concentrated on the mark-up, trade-related side. In addition to the explanations already given, there is a continuing shortage of staff trained in project appraisal in Iran, whilst Pakistan's bankers justify their decisions with reference to their fear of fraud by business borrowers who, due to the punitive rates of tax on profits, are notorious for having several sets of accounts for the concealing of profit. The Pakistan experiment is also thwarted somewhat by continued government borrowing from the public at rates in excess of those that can be offered by the banks whilst Iranian governmental departments can also lend to one another at a significant rate of interest. The allocative properties of a non-interest financial system have been tested in neither country since central direction of sectoral finance allocation contiues.

8. CONCLUSION

The immediate reaction of economists, Christian or otherwise, to the Biblical prohibition of interest is usually one of stifled mirth and a polite enquiry as to the mental health of the proposer. The goal of this paper has been to show that the notion of an interest-free financial

system is not as impractical as one might initially suppose. This is not to say that the efforts of non-interest proponents have been entirely convincing, however. A PLS banking system might possess attractive features on paper but the obstacles to its beneficial implementation are substantial, as the experience of Islamic banking shows. It would seem that a prerequite for its success, for instance, would be widespread commitment to its ideals, either out of religious conviction or disillusionment with the conventional system. Nevertheless, the PLS model is at least useful for highlighting the inefficiencies and injustices of an economy reliant upon interest.

FOOTNOTES

1. A discussion of the Biblical material can be found in Mills, P.S., 1990, 'The Ban on Interest - A Study in the Use of the Old Testament in Christian Economics', ACE Journal, No.1, and Mills, P.S., 1990, Interest in Interest: The Old Testament Ban on Interest and Its Implications for Today, Cambridge Jubilee Centre Publications.

2. The Old Testament seems to prohibit interest but allow hire charges (eg. for draught animals, Exodus 22:15), and leasehold charges on land for the period to the next Jubilee (Leviticus 25:13-17).

3. The logic of the preferability of risk-sharing suggests that crop-sharing agreements are to be favoured above rental arrangements in the case of agricultural land. Net, rather than gross, output or revenue should be shared so as to guarantee that the tenant does not make a loss, despite supplying the labour.

4. For instance, interest-free overdrafts could be rationed by enabling a deposit of £1000 for 2 years to entitle a depositor to an overdraft of £2000 for one year.

5. eg. Khan, M.S., 1986, 'Islamic Interest-Free Banking: A Theoretical Analysis', IMF Staff Papers, p.1-27. Such a reform was initially proposed by the Chicago school of Fisher and Simons in the mid-1930s as a response to US bank collapses.

6. The suggestion of income related mortgages is currently being considered by a large life assurance company in South Africa; Asher, A., 1991, Salary-Linked Mortgages, mimeo.

7. The various arguments are cogently discussed in Goodin, R., 1983, 'Discounting Discounting', Journal of Accounting and Public Policy.