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From the Editor:

In this issue there are two papers revised from the July 2000 meeting of the ACE Study Group. The first is a fascinating attempt to apply economic analysis to understanding the motivation behind the authorship of the Book of Revelation by Ian Smith. The second paper by myself presents a review and appraisal from a Christian perspective of the current state of the British housing market and economists' understanding of housing.

The latest issue (No. 35) of *Faith and Economics* published by our colleagues and friends in ACE (North America) contains articles entitled "'Mind Your Own Business': unintended consequences in the Body of Christ" by A.M.C. Waterman and "Christian Ethics and the Forgiveness of Third World Debt: A Symposium" by Stephen L.S. Smith, Christopher B. Barrett, Daniel Rush Finn and Roland Hoksbergen. Further details are from the secretary, John Mason (mason@gordon.edu).

Andrew Henley,
School of Management and Business,
University of Wales Aberystwyth,
Penglais,
Aberystwyth,
Ceredigion, SY23 3DD,
Wales, UK.

Tel. +44 (0)1970 622504
Fax. +44 (0)1970 622740
Email: andrew.henley@aber.ac.uk

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Contents

A MODEL OF THE MESSAGE OF THE BOOK OF REVELATION

Ian Smith, University of St Andrews[1]

1. Motivation

Thoughtful attempts to apply a Christian mind to the study of economic matters have not yet yielded any major results. It seems hard to specify what constitutes a distinctively Christian investigation of an economic problem or even what a Christian analysis would rule out. Despite the considerable attention paid to methodological issues, the search for methods fruitful enough to generate a genuinely progressive research programme remains unresolved (Smith, 1993).

In the light of this experience, it may be worthwhile considering the possibilities offered by an emerging avenue of research which turns the conventional approach on its head. Instead of applying Christian principles to economic topics, the analytical direction is reversed and applies economic principles to Christian topics.

For those trained systematically in economics rather than in biblical studies or ethics, it is efficient to exploit that comparative advantage in the service of God and his people. Theologians are best equipped to provide a theological critique of economic affairs, while economists possess skills eminently suited to modelling religious markets and choices. Of course, complete specialisation is unlikely to be optimal, especially as there are many members of the Association of Christian Economists who have read widely in economics, biblical studies and theology. But the point is that Christian economists have rather neglected what their specialised training as economists has to offer, namely, economics that addresses, and is intended for, the Christian community itself. There are two promising research agendas: modelling religion and modelling scripture.

(i) Modelling Religion

[1] The author is grateful to Todd Pokrifka-Joe for his theological input and to the participants at the ACE Conference (Oxford, July 2000) for their stimulating comments, many of which are addressed in this revision. The paper is a completely rewritten version with new material of the model presented in Smith (1999).

The first research agenda applies economic models to the study of religion. This is exemplified in the work of Laurence Iannaccone who has made some truly outstanding recent contributions to the study of religious markets, participation, giving, conversion, church growth, secularisation and so on. His accessible survey of the limited but expanding literature was published in the Journal of Economic Literature in 1998. Additional material pursuing the same themes is provided in a compelling new book by two other major writers in the field, Rodney Stark and Roger Finke (2000), sociologists who work within the rational choice framework. Rather than dismissing faith as a declining superstition, a view traditional in the social sciences, the studies by Iannaccone, Stark and Finke and others have been heralded as a new paradigm in the social scientific study of religion, combining a sympathetic and serious approach to religious behaviour with empirical rigour. Reading the prolific output of these authors over the past few years has revolutionised my own thinking about the church and the innovative contribution that economic analysis can make.

(ii) Modelling the Bible

The second and relatively undeveloped research agenda, especially with respect to the New Testament, uses economic theory to model the arguments of scripture itself. Wherever choices, incentives and constraints are discussed in the Bible, it is natural that the economic way of thinking has something to say. Notice that the concern here is neither primarily with the economic history of the ancient world nor with its political economy. Rather the focus is on actual scriptural texts and writing down their logic in an economic model. Although this inevitably requires some acquaintance with biblical scholarship in order to be aware of the main lines of interpretation of particular passages, the principal contribution is that of an economic modeller.

This paper represents an attempt to apply such an approach to the book of Revelation. Previous studies of Revelation with an economic flavour have typically focussed on either the analysis of first century economic conditions in the Roman world, or the issue of the relationship between church and state in chapters 13 and 17, or the critique of commercial exploitation in chapter 18 (Oakman, 1993; Callahan, 1999). Although what follows draws upon this work, the aim here is quite different. It is nothing less than writing down a model of the essential message of book of Revelation as a whole using some elementary microeconomics.

2. Qualifications

Two possible criticisms of this project spring to the mind. First, it may be argued that neoclassical economic theory itself is deficient or limited and can offer at best only incomplete explanations of human behaviour (Beed and Beed, 1999; Birnie, 1993). Second, it might be asserted that writing down a model of Christian behaviour and belief that privileges economic categories is excessively reductionist, impoverishing any description of what it means to be a Christian. Indeed, I myself once held a strong aversion to the imperialistic application of economic analysis across disciplinary boundaries, especially with regard to religious behaviour. But the impressive fruitfulness of the economic approach eventually overcame my initial scepticism and doubts.

In response to the objections, it is important to stress at the outset that no economic model can possibly offer a complete exposition of the rich complexity of the message of any biblical book, nor can it capture all that constitutes Christian faith and life. All models are abstractions with a necessarily limited analytical focus. In no way can what follows be claimed to summarise the content of the book of Revelation in its many themes and subtleties. Even Greg Beale's (1999) monumental 1300 page commentary on Revelation is inevitably selective. Rather the goal is to outline precisely some of the fundamental arguments of the book using economic tools. Note that this is not simply to give economic labels to concepts already well known in the biblical studies literature. What the paper intends to show is that the economic perspective identifies an aspect of the method of Revelation overlooked by the commentators. As with any project, an evaluation of whether the use of microeconomics to model scripture is justified ultimately requires a comparison of the benefits it yields with the (opportunity) costs of the effort demanded.

Of course, Revelation is a difficult, even controversial, book that attracts a wide diversity of interpretations. As far as possible, the paper adopts mainstream or consensus positions on exegetical questions, to the extent that such exist, relying heavily on Bauckham (1993) and Beale (1999).

3. The Seven Churches

The author of Revelation identifies himself as John of Patmos (1:9) who receives a heavenly vision in the form of an apocalyptic prophecy regarding what must soon take place (1:1). It is sent as a circular letter to the seven churches of Ephesus, Smyrna, Pergamum, Thyatira, Sardis, Philadelphia and Laodicea. Not only the brief messages to each city in chapters two and three but the *whole* book of Revelation is highly contextualised, intended to address the local situations of the congregations (Hemer, 1986). The churches are praised where their witness is faithful but censured where they compromise with idolatry:

Faithful witness

Some congregations are commended for their faithful Christian testimony in the face of persecution:

- Unspecified hardships are referred to in Ephesus (2:3) and Philadelphia (3:8)
- Imprisonment and persecution is anticipated in Smyrna (2:10)

- Antipas was put to death in Pergamum during an earlier time of crisis (2:13)
- Scattered throughout Rev are references to the saints slain for obedience to God's commandments and for the faithful testimony they had maintained (6:9; 11:7; 12:17; 16:6; 17:6; 18:24; 19:2; 20:4)

Idolatrous compromise

Some believers within the congregations have compromised their faith, deceived by false teachers:

- At Thyatira believers are involved with pagan religion (2:20) 'eating food sacrificed to idols' and 'fornication' (a biblical metaphor for religious infidelity) deceived by the false teaching of a prophetess labelled Jezebel (in the Old Testament Jezebel led Israel into an idolatrous relationship with pagan deities, 1Kings16:31; 21:25)
- At Pergamum, the same deception has occurred at the hands of a group of false teachers labelled the Nicolaitans (2:14-15)
- At Sardis, 'some have soiled their clothes' (3:4)
- At Laodicea, the problem seems to be complacent affluence

From John's perspective, it would appear that the fundamental problem facing the believers was pressure to compromise and participate in the religious life of Graeco Roman society. This was attractive since believers who resisted participation in Roman civic religion may incur high consumption costs. Smyrna and Philadelphia, for example, are the two churches described as experiencing greatest hardship, their sacrifices leaving them respectively 'poor' and 'weak'. Significantly these are the only two congregations who do not receive any behavioural criticism in chapters two and three of Revelation.

4. The Social and Religious Context

The explanation for the hardships endured by Christians towards the end of the first century is usually linked to the pagan devotions expected of loyal citizens in the Roman province of Asia. The believers faced social pressures to:

- Sacrifice to the gods of the Graeco-Roman pantheon, expressing gratitude for the benefits of the emperor's rule.
- Venerate directly the emperor whose image stood in many of the great pagan temples. The emperor was perceived as like a god with divine power to protect a city and bring peace and prosperity. The so called 'imperial cult' was pervasive in city life and celebrated with festivals, processions, games, public meals, and other rituals. Pergamum especially appears to have been the centre of emperor worship, 'where Satan has his throne…where Satan lives' (2:13).

Failure to participate in the cults of the traditional deities signalled unreliability with respect to social obligations, a lack of solidarity with fellow citizens, and questionable commitment to civic institutions. Indeed such ingratitude for the many political and economic benefits of the empire constituted a dangerous disloyalty to the state that could provoke disfavour from the gods. Consequently, uncompromising Christians risked two types of losses:

(i) Loss of life

Refusal to worship the traditional gods was a capital offence. Although there is scant evidence that the Roman authorities actively pursued nonconformists before the end of the first century, Christians were vulnerable to harassment from their neighbours. In particular, the messages to Smyrna and Philadelphia, with references to the 'synagogue of Satan' (2:9; 3:9), suggest some Jewish opposition. Since Judaism had legal status as a religion, Jews were exempt from the obligation of giving divine honours to the emperor on payment of a tax to Rome. Due either to hostility or a desire to persuade them back into the Jewish fold, Jews may have informed against (Jewish) Christians to local government officials, arguing that Christians did not share their exemption as they were not a legitimate sect within Judaism (Beale, 1999, p.31).

(ii) Loss of livelihood

For tradesmen, commercial viability required membership of a trade guild and participation in its pagan rituals. Each guild had patron gods, worshipped in special ceremonies or in guild feasts in pagan temples. The imperial cult also found expression in most guilds as a normal part of business life (Kraybill, 1996). So non- membership of a guild would incur a large penalty in terms of foregone commercial opportunities and loss of network connections necessary for business activity. This context may be reflected in the famous verses found in chapter 13 of Revelation that no-one can buy or sell unless he has the mark of the beast on his right hand or forehead, that is the number of his name, the enigmatic and much debated 666 (13:17-18).

The False Teachers

The teachers and prophets that John opposed appear to have argued that compromise with idolatry is permissible. They took a liberal stance, advocating an open, less sectarian attitude to relations between the churches and the idolatrous institutions of pagan culture. Harland (2000) argues that such teachers could have appealed to a careful distinction between giving non-cultic and cultic honours to the emperor. The former, including, for example, the dedication of inscriptions, buildings and shields to the emperor would be less objectionable than the latter which directly honoured the emperor as a god through sacrifices, feasts, rituals and the setting up of images and statues. However, outward participation in even the most explicitly idolatrous activities could have been justified by claims that an idol is nothing (1Cor 8:4).

It is clear that John would have none of it. He is hostile to any honouring of the emperors or any involvement in imperial-related civic activities. With reference to the idolatry of Rome, for example, the believers are called to radical separation:

Come out of her, my people, so that you will not share in her sins (18:4)

The book of Revelation then is John's response to a debate within the churches on the acceptable limits of involvement in pagan culture. John seeks to persuade the believers to eschew all pagan idolatry (widely defined) and its current consumption benefits.

5. John's Persuasive Strategy

To counter the incentives to compromise, John employs several strategies:

Exhortation

The believers are exhorted to repent of their idolatry and to incur the current opportunity costs of faithful witness. Two of John's editorial comments, for example, call for patient endurance and faithfulness on the part of the saints (13:10; 14:12). Also scattered throughout the book are exhortations to worship God (not the beast and his allies, 14:7-9; 19:5; 22:9) building on the various pictures of worship in heaven, not least the depiction of the heavenly throne room in chapter 4.

However, John implicitly recognises that, as a motivational strategy, simple exhortation alone may be insufficient to secure his objective, especially when the costs of faithfulness could be very large. Specifically, Revelation devotes itself to persuasive strategies that operate on behavioural incentives, arguments that need to be powerful if believers are to be willing to make sacrifices for their faith even to the point of death. In particular, Revelation seeks to increase the perceived eschatological costs of participation in pagan religion. The central argument of this paper is that John's persuasive strategy functions by insisting that the present benefits of idolatry are exceeded by its future costs and also by using graphic language and dramatic visions powerfully to affect the cost-benefit calculus. The model and its assumptions may be set out as follows:

The Decision Problem:

The believers face two choices, either to *compromise* or to remain *faithful*. There are two time periods the *present* and the *eschatological future*. In the present, faithful believers incur the consumption costs of their obedience, C, which, to simplify greatly, are assumed to be certain. Possible present period costs of compromise are ignored in the model but discussed later as a matter for further research. In the eschatological future, (those claiming to be) believers receive either the rewards of heaven H or incur costs of judgment and punishment L, where $L<0$, depending on whether compromise is punished or condoned by God.

John's debate with the false teachers can be characterised as partially concerning the probability, p, that idolatry, as he defines it, will incur the divine penalty, L. There can be no doubt that John is adamant that all idolatry is eternally dangerous with $p = 1$. Christ is coming soon and each person within the churches will be judged according to their deeds (20:12-13; 21:8; 22:15). The penalty for idolaters is a place alongside Satan, the beast and the false prophet in the fiery lake of burning sulphur (20:10; 21:8). It is noteworthy that cowards are first in the list of those who share the same fate (21:8). Presumably cowards are those not prepared to incur the costs of faithfulness.

A Digression on Judgment According to Deeds

This insistence on judgment of Christians according to their deeds may appear to contradict the Pauline teaching on justification by grace through faith in Christ. However, this would be to misunderstand the apostle Paul who experienced no theological tension in holding to both (Yinger, 1999). Although a believer is saved by God's grace and election rather than by human initiative, salvation is not independent of behaviour. Paul delivers strong warnings that persistent behavioural patterns not in conformity with God's will can lead ultimately to salvation being forfeited (Romans 2:6-11; 1Corinthians 6:9-11; Galatians 5:21; 6:8). Those within the believing community who are obstinately disobedient and consistently unrepentant will not inherit the kingdom of God. Their deeds expose them as not fundamentally aligned towards God and not belonging to his eternal kingdom[2].

To square this position with the doctrine of the perseverance of the saints (once saved, always saved), it is conventionally argued, as in Beale (1999), that those within the church who persist in compromising their witness prove themselves never genuine or true believers in the first place. Their names were never written in the lamb's book of life (13:8; 17:8) rather than erased from it (3:5). Even on this alternative view, however, the force of the eschatological warnings from both Paul and John still remains. Those who engage in pagan idolatry betray by their deeds the invalidity of their apparent Christian profession and will be judged and suffer accordingly. Those who deny the faith by worshipping the beast identify themselves as inauthentic Christians who will share the beast's fate.

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[2] See Bauckham and Hart (1999, pp.142-143) for further justification of this point.

A Digression on Modelling Eternal Outcomes

Note that the eschatological penalty L is modelled as finite or, at least, perceived as finite. Given that L is vividly described as eternal torment ("day and night for ever and ever" in 20:10) it may appear natural to model L as an infinite loss. However this is unattractive since it implies that the expected costs of idolatry, pL, would always be infinite however small is p the (nonzero) probability that idolatry incurs judgment. The undesirable implication is that if L is infinite and $p > 0$ rational believers would never choose to compromise and Revelation need not have been written. Likewise, modelling H as an infinite gain is natural given its eternal duration but again implies the same dubious property that believers would never do anything to risk its loss.

One possible justification for a finite H and L is to consider eternity itself as an infinite number of successive time periods over which a stream of (non-diminishing) benefits or costs are incurred[3]. Discounting of outcomes within eternity, so that more distant payoffs in the afterlife are valued less, would then ensure that the infinite sequence of finite payoffs converges to a finite sum. The problem is that, even though eternity is everlasting, it is usually perceived as timelessly eternal, a single unbounded interval (the 'new age') rather than as an endless sequence of time periods. Indeed, given that time is no longer scarce, it may not be a meaningful concept in eternity.

Perhaps, then, the most defensible justification for treating H and L as finite in decision making is simply that the implications of adopting infinite expected payoffs do not correspond with observed behaviour.

The same problem arises in discussions of Pascal's Wager, a consequentialist argument in support of theistic belief. The Wager asserts that if God exists, the benefits for the believer are infinite. If God does not exist, the loss for both the believer and non-believer are finite. The expected (infinite) payoff to theistic belief, therefore, is greater than that of non-belief no matter how small the (non-zero) probability that God exists. So it is rational to take steps to induce a belief in God.

The empirical problem with the Wager is that everyone does not take steps to bring about belief. Assuming that people do behave rationally, this observation suggests that there must be some flaw in the structure of the argument. Recent discussion in the philosophical literature (Jordan, 1998) suggests that a resolution may lie in abandoning infinite payoffs, the very procedure adopted here for modelling eschatological outcomes.

Time Preference and Imagination Capital

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[3] This conceptualisation is reflected in Woody Allen's quip that eternity is long, especially towards the end!

John's first mechanism for increasing the perceived costs of compromise operates on *beliefs* by asserting that the penalty for idolatry is certain. His second mechanism operates on intertemporal *preferences* by inducing believers to place greater weight on eschatological outcomes in their choices.

In general, the impact of future outcomes on current choices is affected by the weight given to future payoffs relative to those in the present. This weight is known as the discount factor, B. Note that the discount factor is inversely related to the pure rate of time preference, r, where $B = (1/1+r)$. So high discount factors are associated with patience and a low rate of time preference for pleasures in the present.

Becker and Mulligan (1997), drawing on early contributions from both Böhm-Bawerk and Fisher, argue that B is not constant but depends positively on a person's capacity to appreciate the future. They term this capacity, "imagination capital", or future oriented capital, and label it S, with the weight given to future payoffs increasing in S, $B'(S) > 0$. The fundamental point made by Becker and Murphy is that an individual's stock of imagination capital, S, is not fixed but can be accumulated. For the imagination can be stimulated and trained to anticipate distant experiences more readily. If, for example, a smoker interacts with people suffering from smoking related diseases, the smoker may be more able to run mental simulations of possible future health scenarios. This augmented imaginative capacity will render the future less remote and increase the weight placed on long term health consequences in the choice of cigarette consumption levels.

In terms of the intellectual history of this paper, it was reading the article by Becker and Mulligan which prompted me to consider the book of Revelation as an exercise in scenario simulation and image formation designed to influence S and, therefore, $B(S)$. Famously, Revelation contains a high proportion of visual symbolism, dripping with allusions to the Old Testament and extra-biblical sources (Bauckham, 1993). Such graphic and lengthy depictions of the end of history help believers place more weight on both eschatological rewards and penalties.

The ultimate triumph of the saints

In terms of eschatological rewards, the believers killed for their testimony are depicted as vindicated and compensated with a thousand year reign with Christ, the Millennium (20:1-5). The old order is replaced by a new creation in which there is no death or pain or evil and God dwells with his resurrected people in a New Jerusalem described in detail in chapter 21.

The judgment and destruction of God's enemies, especially idolatrous Rome

In terms of eschatological penalties, the central section of the book, chapters 6 through 16, contains three sequences of judgment on God's enemies, proclaimed, respectively, by seven seals, seven trumpets and seven bowls. Between the trumpets and bowls, in chapters 12 to 15, the suffering witness of church in conflict with satanic forces is described. The most well known section is found in chapter 13, where the infamous beast from the sea, representing the power of the Roman emperors, is depicted as drawing its authority from Satan. A second beast, this one from the earth, makes all the inhabitants of the earth worship the first beast (13:12) and his image (13:14). All do so except those whose names are written in the lambs' book of life who are persecuted. Chapters 17 and 18 vividly describe how the martyrs are avenged by the destruction of Rome, the scene of Nero's persecution of believers in the mid 60s (17:6; 18:24; 19:2). The "eternal" city, labelled Babylon and depicted as a corrupting harlot (17:1-5), is seen to be judged and defeated. The beast and the false prophet are thrown alive into the fiery lake of burning sulphur (19:20) followed by Satan (20:10) while birds gorge themselves on the flesh of their armies (19:21).

In summary, the symbolic imagery pervading chapters 4 through 21 of Revelation serves to augment the eschatological imagination capital of the Christian believers. Graphic descriptions of the ultimate triumph of the saints and the judgment of God's enemies enable believers better to appreciate eternal outcomes and to discount them less.

Modelling Notes

- The existence of a new age and eschatological payoffs is not regarded as uncertain by John or his audience. To the extent that uncertainty exists, this would be reflected in the discount factor itself.
- Becker and Mulligan emphasise that for the stimulation of the imagination to affect time preference it is not a necessary condition that additional information regarding the future is disclosed. It is sufficient that future consequences are rendered more salient and less remote in decision making. This mechanism is evident in Revelation through the repetition of Jesus' statement on at least seven occasions that he is coming soon in judgment (2:5; 2:16; 3:3; 3:11; 22:7; 22:12; 22:20). The wait until final judgment will only be 'a little longer' (6:11). It is doubtful whether this is new teaching, rather the repetition of what is already familiar functions to make the eschatological future less remote.

6. A Payoff Matrix Representation

The argument of Revelation can be set out formally using the simple payoff matrix in Table 1 below. The rows describe the two choices facing the believers. The payoffs to compromise depend on the divine verdict regarding idolatry as specified in the (left hand) columns. If participation in idolatrous activities is punished, the believers incur discounted eschatological losses $B(S)L$; if not, they enjoy the discounted benefits of heaven $B(S)H$. The expected payoff from compromise is simply the average of these two outcomes weighted by the probability of a negative judgment on idolatry. The payoff to faithful witness is discounted eternal rewards net of present consumption costs $B(S)H - C$ and is assumed to be independent of the risk that idolatry is punished.

Table 1: Payoff Matrix for the Believers' Decision Problem

	Idolatry Punished (p)	**Idolatry Condoned** ($1-p$)	**Expected payoff**
Compromise	$B(S)L$	$B(S)H$	$pB(S)L + (1-p)B(S)H$
Faithful	$B(S)H - C$	$B(S)H - C$	$B(S)H - C$

The believers would choose to compromise if:

$$pB(S)L + (1-p)B(S)H > B(S)H - C$$

In words, compromise is rational if its expected gains exceed those from faithfulness. Re-arranging the inequality, this can be written alternatively as:

$$C > -pB(S)(L-H)$$

Compromise occurs if its present benefits (namely avoiding the consumption costs of faithfulness) exceed its expected discounted eschatological costs (the loss of heaven and eternal punishment). The model predicts that compromise is most likely when C is high, S and correspondingly $B(S)$ are low, and p or L (or H) are likewise considered to be relatively small in absolute value.

The model also provides a concise framework for understanding the options available to John to influence the choices of the believers. To induce faithful witness, John needs to ensure that the inequality is not satisfied. The argument in this paper focuses on the impact of the message of Revelation on p and S. However, it may also be the case that the detailed description of the New Jerusalem (21:1-22:5) and the vivid judgment scenes function to affect the levels of H and L directly. Likewise, the repeated insistence that Jesus is coming soon may serve to reduce the perceived magnitude of present suffering, C.

Whatever the relative importance of p, S, L, H and C in Revelation, the use of incentives to induce desirable Christian behaviour may appear rather mercenary and crude, even distasteful. The glory and love of God are surely more worthy and higher motives than self interest for right Christian conduct[4]. This is undoubtedly true but note that such a response is not an argument against the model presented here, rather it is an objection to the methods that John of Patmos appears to employ. The key issue is whether or not the description of the message of Revelation outlined above in terms of eschatological carrots and sticks captures fundamental features of John's apocalypse. If so, the objection is to the persuasive strategy used by the book of Revelation itself rather than to the model!

7. Unresolved Modelling Issues

The model is not especially rich in structure. Possible extensions include consideration of attitudes towards risk and also the inclusion of the current costs of compromised witness:

(i) Attitudes to Risk

By not writing down utility functions, the model outlined here implicitly assumes risk neutrality. That is, individuals choose the action with the largest payoff no matter what the risk. This modelling strategy is selected as it is not clear whether Revelation can be construed as addressing attitudes towards risk. However, it would be interesting to pursue the consequences of assuming risk aversion. In general, the more risk averse a person is, the more they would be prepared to give up a large expected return for the safety of a certain gain. In terms of the model, the more risk averse believers are more likely to choose compromise, which offers present benefits with certainty but uncertain future costs, over faithfulness, offering present costs with certainty but uncertain future benefits. Given distaste for risk, compromise may be favoured even if faithfulness offered greater expected returns. For John's purposes, then, reducing the believers' degree of risk aversion would be consistent with his aim of raising the expected value of faithfulness. But it is not clear how this could be achieved even in principle. Since

[4] An argument along these lines is provided by Bauckham and Hart (1999, pp.188-193) in their critique of Immanuel Kant's account of the role of eschatological rewards and sanctions in personal morality. They insist that love, rather than fear of the consequences of doing otherwise, is the only true motive for the pursuit of holiness.

economic theory tends to treat risk preferences as exogenous, it is not very helpful in identifying possible mechanisms through which attitudes to risk can be manipulated.

(ii) Present Period Costs of Compromise

The model as it stands focuses on shifting the cost-benefit calculus against idolatrous compromise by increasing its perceived eschatological losses. However, it may be that the argument of Revelation also operates by raising the present costs of compromised witness.

The many visions describing the world from God's perspective disclose the true nature of pagan culture as idolatrous and allied with the forces of evil. Such revelations function to induce believers to place a much lower value on the gains from participation in activities linked to pagan worship. For by revealing all idolatry to be repugnant from the viewpoint of heaven, its current costs in terms of guilt feelings arising from a troubled Christian conscience are significantly increased. This point is recognised by many commentators when discussing the role of the transcendent or heavenly perspective of the apocalypse, though without really identifying the incentive mechanisms in operation. Take, for example, the following quotation from Lee (1998, pp.172-173):

"[The believers]...learn to see the world from the transcendent perspective and realize that choices must be made through the correct understanding of their situation as part of the heavenly battle between good and evil."

The distinction in Revelation between the spatial dimension in John's visions (God's perspective on the world) and the temporal dimension (the perspective from the eschatological future) is also convincingly emphasised by Bauckham (1993) among others. The present period costs of compromise, therefore, may well be an important variable omitted from the model.

8. Conclusion

The conviction that motivates this paper is the view that Christian economists have something to offer by using their economic tools to study distinctively Christian concerns, such as the church, theology and biblical interpretation. This constitutes a radical departure from the standard approach of using the Bible to comment on the ethics of various economic problems.

The contribution of this paper is to argue that a central component of the method of Revelation is to persuade the believers that engaging in pagan idolatry does not pay off. The short term gains from compromising the Christian faith, as John sees it, are outweighed by the long term (eschatological) losses. There is nothing particularly new in this observation. However, the novel insight from the application of an economic model to the message of Revelation is that its use of visions and graphic symbolism functions to alter the terms of the trade-off between present costs and future benefits. It achieves this by increasing the imaginative capacity of believers and thereby augmenting the weight they allocate to eternal outcomes. In other words, the analysis identifies a mechanism through which Revelation performs its persuasive function, namely by reducing the rate at which the audience discounts the future consequences of current behaviour. This raises the expected costs of engaging in pagan religion so that believers rationally choose faithfulness over idolatry.

The scope for additional research is exciting in its potential. Insofar as they address decision problems facing Christian communities, portions of some New Testament epistles, especially Romans, Galatians, 1Peter and Hebrews, are obvious candidates for the application of a rational choice modelling strategy. More generally, it would be fascinating to explore the extent to which it is possible to write down systematic theology or biblical theology in a general model that encompasses alternative theological positions as special cases. The challenge is to find the most suitable modelling framework. And that requires more than one cerebrally constrained economist to do it!

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PILING UP TREASURE ON EARTH: THE CRAZY ETHICS OF THE HOUSING MARKET

Andrew Henley, University of Wales Aberystwyth*

1. Introduction

The motivation for this paper lies in the fact that virtually nothing has been written on the housing market by Christian academics. A search through the growing number of volumes on the relationship between Christian ethical teaching and economic analysis published over the last twenty years draws a blank. Of course the derivative social principles that the authors of these works lay down are of direct and indirect applicability to the study of the housing market. The lack of material on the housing market is all the more surprising given the growth of research by academic economists in recent years on the importance of linkages between the housing market and the wider economy.

Housing is the single largest asset (or second largest asset after a pension) that most of us will purchase during our lifetime. Many of us will pass through the trauma of transacting a house sale and purchase several times during our lifetime. We are all members of the first or second generation of mass British home-buyers – our parents and grandparents were much more likely to have no purchase choice and faced renting the family home from a private landlord (Table 1).

Table 1: Housing Tenure in Britain 1950-1996

per cent	Owner-occupied	Private rental	Local Authority	Housing Association
1950	29.0	53.0	18.0	-
1971	50.6	18.9	30.6	-
1996	67.0	10.5	19.5	4.6

Source: Department of Environment.

The rapid changes over the last 50 years have been in the growth of owner-occupation and in the growth and then decline in subsidised social housing. Owner-occupation has been promoted by real income growth and encouraged by a generally favourable tax regime. The provision of what was intended to be high quality social

* Parts of this paper, in particular in the earlier sections draw heavily on Henley (1999).

housing was a key plank of post-war social policy. A reversal in that policy combined with a strategy of the sale of that social housing was a key policy of the 1979-97 Conservative government.[1] As a result of these trends Britain has one of the higher, though not the highest, levels of owner-occupation within Europe (Table 2).

One further influence of note on the British housing market over the last three decades has been the pronounced fall in average household size (2.81 in 1971 falling to 2.41 in 1996 according to the General Household Survey, 2.51 in 1991 falling to 2.35 in 1998 according to the British Household Panel Survey[2]). The reasons for this are various but include factors such as the growth in elderly single-person households and the impact of rising divorce and family dissolution.

Table 2: Housing Tenure across Europe 1995

per cent	Owner-occupation	Private rental	Social rental[1]	Other[2]
Germany	38	36	26	-
Austria	41	22	23	14
Sweden	43	16	22	19
Denmark	50	24	18	8
France	54	21	17	8
UK	***66***	***10***	***24***	***-***
Italy	67	8	6	19
Finland	72	11	14	3
Spain	76	16	2	-
Ireland	80	9	11	-

Source: Balchin (1996)
Notes: [1] local and central government and state-subsidised housing associations.
[2] mainly co-operative (tenant-owner) forms of tenure.

So demand for owner-occupied housing has been rising and supply has had to rise to meet this. In real terms owner-occupied housing supply in the UK has adjusted to ensure that house prices have kept pace with the ability of homebuyers to pay. The stylised fact here is that over the long run real house prices are around equal to three and

[1] "Right-to-buy" sales began before 1979 but the scale of selling only became substantial after Mrs Thatcher's election to government.

[2] 1998 statistic computed using weights to reflect difference between population and panel survey "surviving" sample.

a half times real incomes.[3] But this characterisation of the long-run in the UK masks over the last two decades a very volatile housing market cycle (Figure 1).

2. Why did the British housing market have a boom-bust cycle?

Why has the housing market been so volatile in Britain? The reasons for the 1980s and 1990s boom-bust cycle have been much debated in the economics literature. It is possible to point to a number of not necessarily mutually exclusive factors. The first factor was the process of financial deregulation set in train by the Conservative Government after its election in 1979. The effect of this on housing finance was to allow banks and other financial institutions to compete with Building Societies in the provision of long-term mortgage finance to homebuyers. A number of effects followed from this; the traditional "queuing" for mortgages with Building Societies disappeared. The margin over the Bank of England base-lending rate charged by lenders started to fall. The down-payment constraint started to relax (for the first time homebuyers could borrow nearly all and in some cases all or more of the purchase price of their homes). The ceiling on the ratio of mortgage advance to applicant's income judged financially prudent started to creep up. As a result a large pent-up demand for housing finance was unleashed and, as in any market in which a ration is removed, the equilibrium price of the final product rose. One consequence of this process is that Britain now has one of the highest levels of outstanding mortgage debt of any European economy (Table 3).

Table 3: Outstanding Mortgage Debt of % of GDP across Europe

	Per cent
Germany	51
Austria	30-33
Sweden	51
Denmark	65
France	21
UK	***57***
Italy	7
Finland	30
Spain	22
Ireland	27

Source: European Monetary Institute (1998), reported in Maclennan *et al*. (1998).

[3] The long-run coefficient in a co-integrating relationship between the two variables.

A second factor was the effect of council house sales. Although this was a policy that had begun prior to the 1979 change of government, it was only actively promoted after 1979. By 1987 one million council houses and flats had been sold under the scheme; by 1996 the cumulative figure had risen to one and a half million. Henley *et al*. (1994) estimate that the average sale discount in the early 1980s was just under £12,000 (in 1985 prices). Given average house prices at the time, and the fact that most council housing stock in open market valuation would have been towards the bottom of the market, this represents in aggregate a substantial windfall. While ex-council properties can be less easy to sell again, as the policy progressed and whole estates were transferred into owner-occupation, this windfall gain became progressively easier to realise.

Council house sales affected the lower half of the market. A third factor, namely the prevailing fiscal environment, affected the upper half. In 1988 the then Chancellor of the Exchequer, Nigel Lawson, reduced the higher rates of taxation from a series of bands up to 60 per cent to a single rate of 40 per cent. The effect of this was to improve significantly the disposable incomes of middle and upper earners at a time when the mortgage rates were low. The rationale for this tax cut was to do with improving supply-side incentives faced by "wealth-creators". The inflationary consequence was pure demand-pull Keynesian. In addition the 1988 Spring Budget announced a restriction in the tax relief on mortgage interest payments (the removal of double relief for unmarried "house-sharers"). In itself this might have been a sensible measure, but the pre-announcement of the change five months in advance generated a stampede of first-time buyer and trading-up unmarried co-habitors into the housing market in the spring and early summer of 1988. The changes had one-off effects, but a subtler shift in consumer psychology was taking place during the 1980s. All politicians, if they are fortunate enough to preside over a sustained economic boom, start to believe that they had abolished the business cycle. But by the late 1980s homeowner consumers may have started to believe the politicians' rhetoric. Real income growth was at a permanently higher rate – or so consumers thought. House prices would keep rising and every year the government would find a new privatisation windfall with which to demonstrate its continued largesse. Some fascinating and detailed research by Attansio and Weber (1994) shows that it was amongst the young – those most likely to be considering their first move into the housing market – that this perception of a permanent income shift was strongest. Older Britons were more likely to have experienced politicians breaking their promises before and were far less likely to be fooled.[4]

One further policy change that may have affected house price inflation at the time was the reform of local property taxation. The story of the introduction of the Poll Tax (in April 1989 in Scotland and April 1990 in England and Wales) and its role in the eventual political demise of Margaret Thatcher is well known. What is less well understood is that reforms to local property taxation tend to be capitalised into house

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[4] Aggregate-level work by Muellbauer and Murphy (1997) also points to the importance of income expectations and demographic influences.

prices. So if a high level of local property "rates" is replaced by a flat rate tax on occupancy then this makes larger houses relatively more attractive to buy (since the housing user cost of living there has fallen) and so prices rise. Rosenthal (1999) estimates that around 30 per cent of the average real house price increase that occurred between 1985-86 and 1990-91 can be attributed to the switch from the domestic rating system (a tax on property value) to the Poll Tax.

The key transmission mechanism from the booming housing market through to consumer spending and eventually consumer price inflation was the process of "housing equity withdrawal". This was a consumer response that macroeconomic forecasters at the time, including both the Bank of England and the Treasury, failed to identify until it was too late. Carruth and Henley (1990) estimate the effect of housing equity withdrawal in 1988 to be of the order of £12 billion (in 1985 prices). This is a huge sum of money- it amounts to £500 of under-predicted spending (or over-predicted saving) for every one of the then 24 million households in the UK. The link between financial deregulation and housing equity withdrawal is clear – increased competition to sell mortgages increased the "fungibility" of housing wealth. In the context of a booming housing market in which the average UK homeowner saw their housing investment increase in value by 90 per cent over the four and a half years from Spring 1985 to Autumn 1989, there was both scope and opportunity. Neither had really existed before.

The 1990s crash in the housing market was inevitable. Firstly houses had become so expensive by the late 1980s that they had become unaffordable. Figure 1 shows this quite clearly. Secondly the consequences of the consumer spending boom were typically Keynesian. Excess demand fuelled price increases for consumer goods and as inflation rose the government belatedly raised interest rates. Since in Britain (unlike in most other European countries) the majority of mortgage repayments are adjusted swiftly to changes in short-term interest rates, disposable incomes net of housing costs fell sharply and people stopped trying to sell and "trade-up". The volume of housing transactions in England and Wales fell from 2.1 million in tax year 1988-89 to under 1.2 million in tax year 1992-93 (Inland Revenue Statistics 1997). The housing market recession was so severe that for the first time in post-war Britain we experienced widespread and sustained falls in nominal house prices. This led to an entirely new economic phenomenon – negative housing equity. At its worst the 1990s recession led to around 6.5 per cent (or 1.5 million) of households finding themselves in a situation where their house was worth less than the mortgage secured on it.

Table 4: Negative Equity in 1990s Great Britain

	Average Housing Equity	% of Households with Negative Equity	Average Negative Equity
1991	£52,493	2.5	£4,227
1992	£46,145	6.5	£4,582
1993	£44,022	6.5	£5,060

1994	£43,608	6.4	£4,651
1995	£42,473	6.4	£5,079
1996	£47,626	3.3	£6,622
1997	£51,969	2.4	£4,677
1998	£56,091	2.1	£5,791

Source: author's own calculations from British Housing Panel Survey, Waves 1 to 8.

Why was negative equity a problem? As long as you do not need to move and as long as you are able to afford the mortgage repayments negative equity is not a problem. The main reasons why people have to move house are because their family circumstances have changed (birth of children, marital breakdown, and infirmity in old age) or because they have lost one job and must move to take up another. To varying degrees these all amount to (unexpected) income shocks. For owner-occupiers in a housing market where one cannot sell, at least not at price that will clear the mortgage debt, such income shocks are the major cause of mortgage arrears and ultimately repossessions. Nevertheless for those who did not have to move a serious adverse shock to their housing wealth might well induce other adjustments to their consumption/savings decisions and their overall portfolio of assets. This is likely to be particularly important for older households where current spending is financed from wealth rather than labour income, and where precautionary holding of assets against ill-health and infirmity is a stronger motive Disney, Henley and Stears (1999) estimate that among the over 55's who did not move home a 10 per cent fall in house prices between 1989 and 1994 induced on average an increase in financial savings of £1900. For those who did move home, where the opportunities for portfolio adjustment become much larger, the figure is an increase of £7,800. So for a significant minority the dream of home-ownership, carefully fostered by successive governments since the 1950s, very quickly turned into the nightmare of personal financial tragedy.

3. What does the Bible have to say on the ethics of housing?

What the Bible has to say about housing is quite sparse and it hardly needs pointing out that the social and economic world of the Old and New Testaments is a long way from that of a 21st century industrialised market economy. Nevertheless we may find important clues as to how Biblical ethics might impact on housing market activity. However a strong note of caution is worthwhile here. A "concordance trawl" such as I present here will be strong on detail but may be weak on ascertaining broader biblical themes that may inform an application of biblical ethics to the subject of the housing market. A more thorough approach would want to tie the ideas gleaned here into more broader "derivative Christian social principles". The final section of the paper attempts, albeit in a very preliminary way, to offer suggestions along these lines.

A first observation to make is that the Bible tends to portray house-building as an activity of a strictly instrumental nature, that is for the specific purpose of providing physical security from the natural elements for the family. Housing should be dedicated as holy to the Lord as a matter of urgency and importance (Deut 20:5), and consecrated free from "unclean" materials such as gold and silver obtained from idols (Deut 7:26). The accumulation of fine housing is not a high priority – it is to take a strictly lower order of priority to the physical resourcing of God's house. The Children of Israel were advised that "when you build fine houses and settle down and when your herds and flocks grow large and your silver and gold increase and all you have is multiplied, then your heart will become proud and you will forget the Lord your God" (Deut. 8: 12b-14). In a similar vein David expresses his own sense of guilt that he is living in a "house of cedar" (NIV) while the Lord's house (where the ark of the covenant dwells) continues to be a tent (2 Sam 7:5) ("within curtains" AV). David's response is to vow to build a permanent temple, although Nathan prophesises to him that it is not for him to set God's construction agenda. With hindsight we know that it was in God's purposes that David's son Solomon would build the permanent temple, and that before his own palace. By contrast, several centuries later Haggai, prophesying to the people of Israel, after their return from Babylonian exile, criticises them for devoting their energies into building and restoring their fine housing while failing to turn to the restoration of Solomon's temple. Haggai 1:3 refers critically to "panelled houses" (NIV). The Hebrew here (sapan) also has the connotation of having "high ceilings" (c.f. AV "cieled"). In passing we should also note that house-building is an activity for women as well as men (Prov 14:1), and that we are recommended to place the provision of food above that of shelter (Prov. 24:27).

A second observation is that fine housing is of no use if not dedicated to the Lord and complementary to righteous behaviour. On the other hand the enjoyment of one's house building efforts will be a blessing for obedience. Deuteronomy 28:30 warns that one of the curses of disobedience is that one will build houses but not live in them. The teacher writing in Ecclesiastes observes that the building of a fine house for oneself, along with vineyards, gardens and parks, is all well and good, but ultimately meaningless (Ecc 2:4). Psalm 127:1 informs that "unless the Lord builds the house, its builders labour in vain" (NIV). Job, lamenting on his predicament, in one of his discourses reasons that the house of built by a wicked man "is like a moth's cocoon, like a hut made by a watchman. He lies down wealthy, but will do so no more; when he opens his eyes all is gone" (Job 27:18-19, NIV). In various places in Proverbs we are warned against the enjoyment of secure housing at the cost of wickedness and strife (Prov. 15:6, 17:1). Indeed the writer reminds readers twice, no less, that a man is better off living on the corner of the roof than inside with a quarrelsome wife! (Prov. 21:9, 25:24) On the other hand one wants to impress a prospective wife, try cedar beams and fir rafters (Song of Songs 1:17).

A third observation is that housing is an asset with a continuing use value, and so should be stewarded with an appropriate level of care. Proverbs 19:14 recognises that housing can form a strategic bequest between generations (presumably because of its instrumental or use value), whereas "a prudent wife is from the Lord" (NIV). Leviticus 14:33ff records sanitary regulations in the event of discovering mildew in one's house. Clearly well-maintained housing is important for the prevention of disease and maintenance of good hygiene. Care should also be taken in construction, so as to avoid a design that might lead to the injury of a third party. Thus Deuteronomy 22:8 recommends the construction of a parapet to prevent one's guests from falling off the roof (presumably after climbing up to enjoy the cool of the evening, or perhaps to admire the view?!) The teacher of Ecclesiastes is even more to the point on the subject of roofing maintenance: "if a man is lazy, the rafters sag; if his hands are idle, the house leaks" (Ecc. 10:18, NIV).

Finally we should note the observation that the Bible seems to recognise that other people's houses will be high on the list of items we might covet. In the tenth commandment as it first appears in Ex 20:17, your "neighbour's house" is first on the list, although when Moses restates the commandments for the forgetful Israelites in Deut 5 your neighbour's house comes second after his wife.

So is housing in the Bible seen as a valuable, durable asset or merely a consumption good? The answer would appear to be the former, but with some strong counsel against accumulating fine housing for its own sake, and at the expense of reliance on the Lord's blessing. The fact that housing is regarded as an asset seems implicit in Leviticus 27:14, where a man may dedicate his house to the Lord, subject to a valuation by a priest. This valuation (plus 20 per cent) denotes the amount that the individual must then pay to redeem the property. In effect housing is used as collateral to allow an individual to fulfil sacrificial obligations under the Law (although perhaps not, as in present times, as collateral for general consumption). There also appears to be in the Levitical regulations a recognition that rural housing (presumably with land attached) is of greater economic importance as an asset than urban housing. This is because the sale of urban housing, if sold, is not subject to the provisions of Jubilee (with a one year "cooling-off" period on the transfer of the freehold (Lev 25:29ff)). The same is not so of housing in "open country" or housing belonging to Levites. One possible explanation for this exemption might be that urban housing is not necessary for the maintenance of economic livelihood and social inclusion, whereas in the entirely agrarian economy of the countryside it is, and for Levites who can only fulfil their priestly role in the town it is. For rural housing the Jubilee of Leviticus 25 in effect establishes that freehold is retained in perpetuity, and that housing may only be sold under a leasehold arrangement, with the lease term set at a maximum of 49 years. We can only speculate as to whether valuations between Jubilees (if they ever took place) reflected the annuity value of the finite flow of economic rent.

A further hint of the distinction between urban and rural housing is in the allocation method chosen by Nehemiah when deciding who would enjoy the privilege of living within the walls of Jerusalem after the return from exile (Neh 11:1 ff). Demand (at least at zero price) appears to have outstripped supply ten-fold, and so Nehemiah conducts a lottery with a 10 per cent chance of being allocated a property within

Jerusalem and a 90 per cent chance of having stay on one's own town. A random allocation such as this might have been inconceivable if the resource had been rural housing, as losing would have conferred social and economic exclusion. However since this prime real estate would have had substantial freehold value (given the discussion above) we are left wondering why Nehemiah choose to distribute a substantial economic rent by free lottery rather than use a device such as an auction to appropriate the rent for public purposes.

The New Testament provides little direct material on housing. Jesus tells the disciples that they should not worry about physical provision for their lives– it will be provided as part of God's providence (Matt 6:25ff., Lk 12:22ff). The accumulation of housing for speculative purposes or for reasons of conspicuous consumption would appear to be discouraged under the general exhortation not to "store up treasures on earth, where moth and rust do destroy, and where thieves break in and steal" (Matt 6:19, NIV, see also Lk 12:32-34). The earlier church appears to have been keen to dispose of housing wealth in order to feed its membership. Whether this housing was surplus to a strictly limited need for shelter is open to speculation. Certainly the action appears to reflect the Old Testament prioritisation of food before housing (Prov 24:27), but I think it is unreasonable to assume that this behaviour left members of the Church will no roof at all over their heads. What it might illustrate is that the Church had other priorities than excessive consumption of housing service and accumulation of housing wealth.

4. How does orthodox economics model the demand for housing?

As we move from the detail of biblical material on housing to the stylised world of a neoclassical housing market the enormous gulf between the two becomes readily apparent. Miles in his (1994) text on housing and the economy identifies nine particular features of houses and housing markets that separate their analysis from that of other goods and markets. They are:

1. Durability;

2. Uniqueness - no two houses are identical (if only in location);

3. Complete inelasticity of supply for a particular house – following from uniqueness;

4. Houses are a better source of collateral than most other assets;

5. Well-developed secondary market, but with substantial transactions costs;

6. Price volatility – perhaps no more so than other assets, but implications for wealth distribution may be greater;

7. Housing is often a strategic bequest, and often forms the largest component of bequeathed wealth;

8. Tax regimes often favour home ownership;

9. Financial intermediation in the market – the lending practices of housing finance institutions can have significant impacts on housing demand.

A number of implications follow from these for modelling purposes. The first is that housing demand tends to be derived from a representative agent model of inter-temporal consumption choice. The second is that the nature of the housing finance market assumed to operate is of particular importance to the predictions of the model. The third is that housing tenure choice (and specifically the timing of transition from rental tenure to owner-occupation) will be dependent on the structural parameters of that inter-temporal choice problem, and on the availability of housing finance. The fourth is that although there may be long-run exogenous influences on housing supply (government attitude to land-use planning etc.), house prices tend to be driven by demand-side rather than supply-side influences.

A key concept in the modelling of housing demand, which follows in particular from the first of these points, is that of housing user cost. Housing user cost is the ratio of the marginal utility of housing to the marginal utility of other goods, and so captures the consumer's optimal allocation of dynamically optimal consumption expenditure between housing consumption and other available goods. Consequently those variables that determine housing user cost will also determine the demand for housing. The "conventional" model predicts that the following will be determinants of housing user cost (Poterba 1984), with the partial derivative signed accordingly:

- The "unit" price of housing (+ve)
- The rate of property taxation (tax on the imputed flow of housing service) (+ve)
- Insurance, repair and maintenance costs (capturing the risk of damage in a particular location) (+ve)
- The housing asset physical depreciation rate (+ve)
- The real interest rate (the opportunity cost of investing in a representative alternative financial asset) (+ve)
- The expected rate of housing asset appreciation (-ve)

A more sophisticated model that might incorporate an attempt at modelling more thoroughly the institutional characteristics of housing finance provision (see Miles 1994, p. 16ff) would also add the following:

- The real mortgage rate (which may or may not approximately equal the real interest rate, depending on the relative tax treatment of mortgage interest and the extent of competition in the provision of mortgage finance) (+ve)

- The extent to which there is a risk premium on houses because unanticipated fluctuations in house values are correlated with fluctuations in the marginal utility of income (+ve or –ve depending on the sign of the correlation)
- The extent to which any borrowing constraint reduces utility from consumer goods and housing service because it prevents the inter-temporally optimising consumer from achieving the optimal life-cycle consumption/housing programme (more succinctly put as the extent to which bank lending policies prevent the consumer from being as impatient as he or she would like to be) (-ve)

What conclusions can we draw from this about the accumulation of housing wealth? The first is that the economic analysis of housing is predicated on housing fulfilling both a consumer durable and a speculative asset role. Housing user cost (and thus the demand for housing) depends on both physical depreciation and maintenance cost, and on the investment opportunity cost and expectation of future appreciation in value.

The second is that institutional regulation of housing finance will result in sub-optimal consumer life-cycle behaviour, which in a general equilibrium sense might be Pareto sub-optimal. A strictly neo-classical approach to the housing market, conditional on competitive housing and finance markets, is suspicious of any form of housing regulation or subsidy (be it in the form of borrowing constraints, favourable tax treatment of both housing capital gain and the imputed income from the housing asset, or taxation arrangements which drive a wedge between the real mortgage rate and the real interest rate). Not only will such policy interventions upset consumer optimising behaviour as between purchasing housing or other consumer goods, but also upset tenure choice decisions between owner-occupation (entailing risky speculation about future housing wealth gains and losses) and forms of rental tenure. Equally, “misguided” subsidy of publicly provided rental housing may be highly distortionary (see Minford et al. 1987).

A final conclusion is that unanticipated volatility in incomes will affect the risk premium of housing investment and may encourage or discourage owner-occupation. Miles (1994) suggests that unanticipated positive income shocks might be expected to increase housing demand and hence house prices. For existing owner-occupiers their (housing) wealth increases and this allows them to increase consumption expenditure. For those considering owner-occupation this makes tenure-transition more difficult. However households may use housing as a “hedge” against volatile incomes, reducing consumer spending and increasing their housing investment, or accelerating the transition into owner-occupation, ceteris paribus. Miles suggests that this seems unlikely because regional house prices and regional employment prospects and strongly correlated, while inter-regional rates of mobility are low. On the other hand Oswald (1996) has noted a rather remarkable positive correlation between owner-occupation rates and unemployment. Nevertheless income volatility and house price volatility do appear to correlate in recent UK data, suggesting the 1980s housing equity withdrawal phenomenon was a consumption response to unanticipated increases in housing wealth.

5. Is owner-occupation a good thing?

A potentially fruitful linkage to explore concerns the relationship between homeownership and the accumulation of "social" capital. Owner-occupiers (and perhaps also social-sector tenants) may accumulate higher levels of social capital in a given neighbourhood compared to (private-sector) renters with otherwise similar characteristics. DiPasquale and Glaeser (1998) show using American and German micro data that homeowners are more likely than renters to participate in non-profit organisations, in political activity, attend church and even tend the garden. (They are also more likely in America to own a gun, presumably because they have more "social" and physical capital worth protecting.) Consequently their increased "social embeddedness" may be manifest in lower potential job mobility. As far as we are aware, no similar research has been conducted using British data. "Social embeddedness" may of course be higher for married couples, particularly those with children, than for single people, and regional employment mobility for one partner may be additionally constrained by the non-existence of suitable opportunities for the other partner.

Why might owner-occupiers be more "rooted"? There is the straightforward explanation that high levels of housing transactions costs discourage geographical job mobility, limiting search to the immediate travel-to-work area, or placing upward pressure on commuting distances and times. This is the Oswald (1996) thesis behind his correlation of owner-occupation and unemployment rates. So, for example, Henley (1998) shows that residential mobility is very unresponsive to long travel-to-work times. Transaction costs tend to be higher for owner-occupiers compared to renters, and since they are generally a function of house prices, absolutely higher for people with more expensive homes. This implies that higher house prices, because they increase the transactions costs of moving, may be associated with reduce quitting and lower job mobility.

American economists especially suggest that the reason for high rates of European unemployment is that European workers simply do not migrate enough. In the USA in a typical year around three per cent of the population migrate across regions, in the UK, Germany and Italy it is barely one per cent per annum (OECD Jobs Study 1994). A high level of mobility may help the labour market work better. But it is far from clear that increased geographical or residential mobility is in itself a good thing: the benefits in terms of a more flexible labour force may be outweighed by the social costs of more transient and less "rooted" communities.[5] These costs may show up in terms of increased transport congestion and travel-to-work times, and in the long run in terms of the fragmentation of extended family networks. To return to the issue of negative equity,

[5] For further discussion of the problematic nature of labour flexibility see Henley (2000).

it was only because people needed to move, and because of the demands of the labour market, that the state of the British housing market in the early 1990s was an economic problem. Nevertheless the experience poses the question of whether the rate of owner occupation in the UK is for the future unsustainably high (or conversely the supply of private rental accommodation too low).

6. Will British house prices continue to be volatile?

Will the high degree of volatility observed since financial deregulation in the early 1980s will persist into the future or was the boom-bust cycle of the 1980s and 1990s a "one-off" resulting from structural change in the economy? Could it happen again? Christian economists ought to be concerned with this question to the extent that in the upswing it might spark a new speculative housing bubble, resulting in exclusion from the housing market for low-income households in high price locations. They ought also to be concerned because it could lead to some households becoming "over-extended" with mortgage debt, resulting in the downswing in negative equity and increased mortgage repossession.

There are persuasive reasons for thinking that the 1980s and 1990s boom-bust cycle was a one-off. Financial deregulation was a one-off policy change; it is not a continuing process through which competition to sell mortgage products gets progressively fiercer. The current trend is for the reverse, as financial institutions have been looking to merge or absorb smaller competitors. The crucial year for the last boom was 1988 the year when a number of fiscal policy mistakes were made. It seems unlikely that the same mistakes would be made again – not least because we now know that the macroeconomic forecasts of the time were wrong and why. (It is also tempting to hope that politicians have learnt from past mistakes – the economic policy of the Fifeshire manse has a strong dose of prudent, non-conformist demand-side austerity stirred into it, unlike the supply-side thinking that had earlier imbued the economic philosophy of the Grantham grocery store!) There has also been some adjustment in the degree of favourableness in the tax environment for owner-occupation since 1988. Mortgage interest relief has been carefully reduced and will disappear completely in 2000. The aftermath of the poll-tax debacle has seen a return to some semblance of local property taxation, albeit to a system which is rather regressive at higher property value levels. It would be a very foolhardy policy-maker who was to propose a further root and branch reform to local taxation, given the political fall-out from the last time it was attempted.

Most mortgage lenders had to deal with significant levels of mortgage default (home repossession) in the aftermath of the last boom. It seems likely that a greater measure of prudence in lending policies has now emerged. One policy suggestion that merits consideration, if we are concerned about the consequences of a future repetition of the housing boom, would be the removal of capital gains taxation from withdrawn housing equity. I would envisage that gains on sale of an owner-occupied residence would be subject to capital taxation, subject to a full “rollover relief”; that is if you reinvest all of the proceeds of the sale into a new house purchase no tax liability would be incurred.

The final factor that fed into the 1980s boom was monetary policy. Monetary policy in late 1987 and 1988 was, with the benefit of hindsight, far too lax. But at the time the monetary authorities were pre-occupied not with the state of the housing market but with trying to second-guess the economic consequences of the Autumn 1987 Stock Market crash and more latterly with a policy of targeting the exchange rate. It is in this last observation that there may be some lessons for the future. Prospective membership of the Euro will require the transfer of control over monetary policy (interest rates) from the Bank of England to the European Central Bank (ECB). The ECB sets interest rates with due regard to economic conditions throughout Euroland. At present it believes that those conditions warrant a rate which is around half that currently set by the Bank of England. Is Euro membership consistent at present with a “well-behaved” housing market?

7. Assessment

By way of an assessment I offer a number of normative suggestions for further discussion and evaluation by Christian economists. As to conclusions then my own thoughts are perhaps at too early a stage for anything other than judicious “fence-sitting”. My suggestions include the following points:

- Christians ought to be concerned about declining household size and its impact on housing demand.

- We might have concerns that freehold in a pure “property rights” sense is an alien concept in the Bible - residence in a particular location entails stewardship responsibilities, responsibilities to construct and maintain “social-capital”.

- Owner-occupation may not be the most appropriate form of housing tenure for everyone, in particular for young single people, and the newly married without children. Yet it does seem, given human nature and motivation, to offer the best incentive towards responsible stewardship of a social useful asset (in the context of Biblical exhortation to take care of housing).

- Financial institutions have an ethical responsibility to be responsible in their mortgage lending practices and policies.

- We might have serious concerns about the practice of mortgage repossession to the extent that we must marry with this with Biblical ideas about redemption from debt slavery. In particular the practice of possession and resale below a fair market price, often leaving the repossessed with an undischarged mortgage debt, is problematic.

- The accumulation of housing for speculative purposes or for the purposes of conspicuous consumption does not fit easily with Biblical ideals.

- The ethical dimension to the issue of the relationship between income risk and housing is the question of whether prudent households ought to spend more (withdraw equity) if incomes become more volatile, or whether "bricks and mortar" ought to form a hedge against the uncertainties of the world. Can one square "prudence" with "non-speculation" and a practical application of the Biblical picture of reliance on God's grace alone.

- Housing equity withdrawal appears to contradict biblical injunctions to provide housing for children and to avoid conspicuous consumption. This said the early church appear to dispose of housing wealth when its priorities were necessary food and clothing. Housing wealth accumulation may fuel covetousness.

There is in here a substantial agenda for further reflection and research by social scientists and theologians alike. I hope I have managed persuade at least some that it is an agenda worthy of further pursuit.

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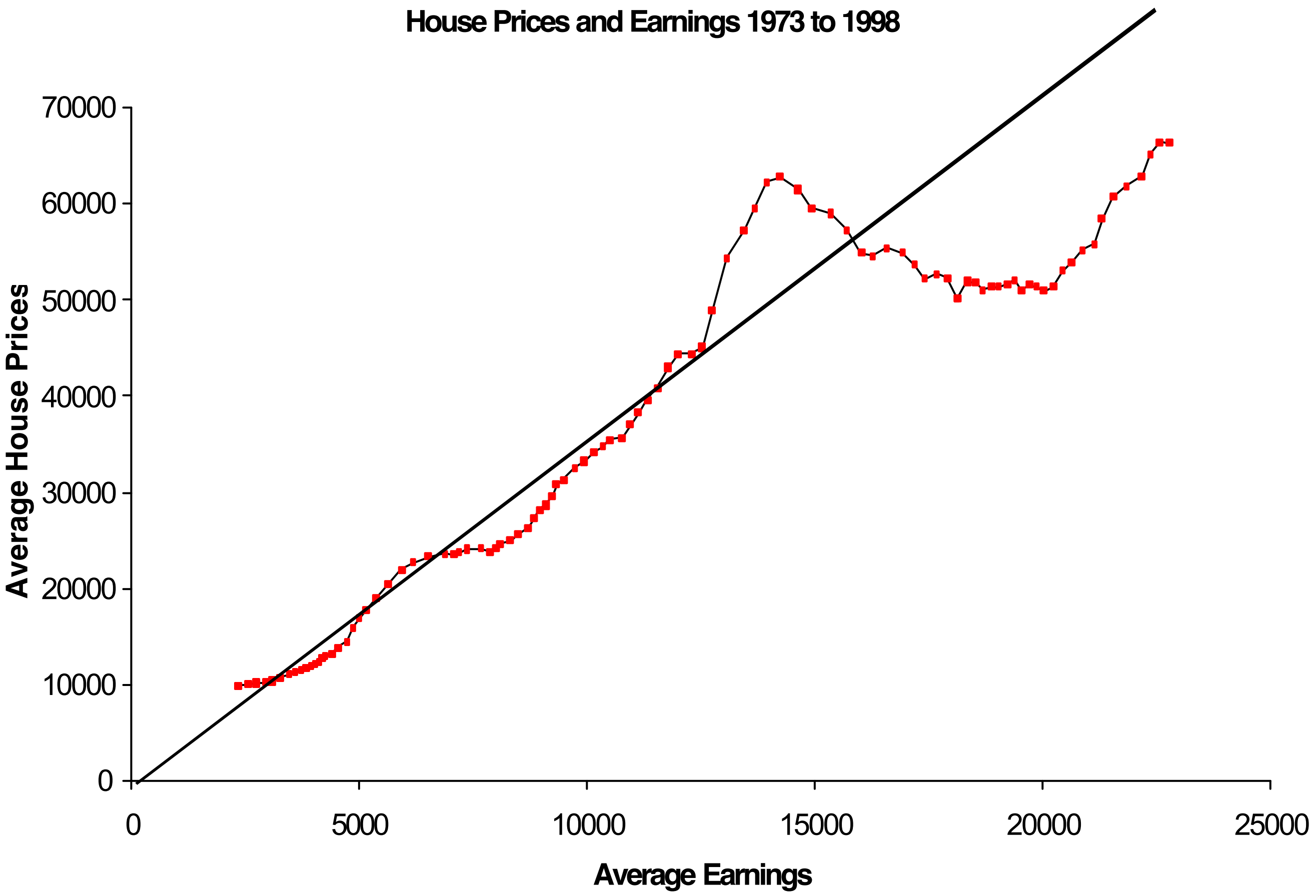
Figure 1: UK House Prices and Earnings



Note: the straight line denotes the ratio average house price equal 3.5 times average earnings.

Source: Average house price, Nationwide Building Society; average earnings, Office for National Statistics Databank.

BOOK REVIEW: ***A Business History of Britain 1900s to 1990s*** **by David J Jeremy Oxford University Press, 1998, paperback, 610 pp.**

Prahbu Guptara, International Institute for the Management of Telecommunications, University of Fribourg, Switzerland

Business history is not a subject with a long history itself - which is not surprising, since business has become important enough to be a subject worth treating from a historical point of view only since World War II. In fact, it could be argued that the rise in the importance of business is a mark of late modernisation as, in most traditional societies (I speak from some knowledge of Africa, India, China, Japan, Continental Europe and Britain), business people have held a relatively low place in society, usually only just above that of peasants. The struggle of the most successful business people in Britain to assimilate into "society" in eighteenth-century England is well documented and I would guess that the process has been analogous elsewhere. The importance of business history is only just beginning to be appreciated, both for the contemporary performance of individual companies (the role of company history in the formation of company culture has been well understood only since the 1980s) and for the understanding of business performance (it is becoming understood that business success is largely a matter of factors outside one's control).

A few people, such as the author of this book, have been arguing for the introduction of business history into MBA courses so that potential managers can gain some minimum understanding of the rise of their "profession" and of the issues and challenges faced by business in the past, so that they can be better equipped for facing the issues and challenges of business in the future. The essential problems of US-style MBA-courses are clearly that they generally foster a kind of "mathematocracy" which marginalises personal qualities, organisational or global values, morality, spirituality, history, and culture. A few MBA courses have in fact now started integrating at least business history, and Professor Jeremy has responded to the market need for a textbook in this field. There are, of course, other books on business history, but most focus on individual firms or on particular towns and regions; this is the first history of British business in this century. The difficulties which Professor Jeremy has negotiated in producing this work have not been negligible, though he makes light of it: „Because most historical studies of individual firms have related to the most successful and the largest, neglecting well over 90 per cent of firms that have come and gone, a complete picture cannot be painted. However, with the concentration of business, in the second half of the century especially, the minority of large firms have determined the performance of whole industries and hence of the economy itself. So generalisations about the business behaviour of firms in the post-1950 ...shift (from manufacturing to services), based on the "big firm" industries, have greater applicability than those about firms in the ...shift (from "old" manufacturing to "new" manufacturing".

Ordinary readers too will find this business history of Britain fascinating and instructive (as will people who are generally interested in British history, and businesspeople whether from Britain or from elsewhere), mainly because of the immense wealth of information that Professor Jeremy has managed to distil into it. The book does not presuppose a knowledge of economics, history or business history, considers all the big issues in the development of British business (such as relationships with government, with technology, with ecology, and with inequality) and is organised so as to cut across and draw on an astonishing range of data and experience from individual companies and entrepreneurs as well as from particular towns and regions.

There is hardly an aspect of British business which is not covered in the book. The only possible criticisms that can be made are that the book excludes some of the very latest perspectives on business (such as comparative institutional analysis) and that, in spite of the wealth of data, there is no glimmering of the role of immigrants in creating business success not just in the East End, but in places such as Southall, Gravesend, Birmingham, Manchester and Glasgow; Leicester may be considered to have survived as a city primarily because of the enterprise of Gujaratis expelled by Idi Amin (for a more detailed study of the role of Asian enterprise in Britain, see Ram Gidoomal's The £5 Billion Corridor, published by the South Asian Development Partnership). Professor Jeremy's book is in fact something of a compendium or encyclopedia of the subject and will grace my shelves as an essential book of reference, with chapters or sections on company culture, religion and ethics, on the political and economic dimensions of markets, on the role of entrepreneurs, technology, invention, innovation and research & development, on structures and strategies, or merger waves and the creation of big business, on multinational activity, on the City, on managerial education, on labour relations, and on marketing. Wonderfully, there is a 32-page index in three columns, which enhances its usefulness as a work of reference no end.

Not content with concentrating nearly a hundred years of business history into some five hundred and sixty pages, Professor Jeremy hazards a six-page conclusion, in which he observes that "on the receding horizon" lay Britain's past as the first industrial nation, overtaken as it was by countries such as the USA, Germany, France and Japan, "whose populations were larger, whose natural resources greater (Japan excepted), and whose opportunities to apply appropriate technologies were wider than those of Britain". In the first half of the century, the country managed the shift from the "old" manufactures (cotton, wool and shipbuilding) into the "new" manufactures (chemicals, motor vehicles, electrical good and aircraft) less well than it managed the shift, in the second half of the century, from the "new" manufactures to services (including government service, civil and military service, but also financial services, computing and high-tech manufacturing where the line between manufacturing and service is a tenuous one). Interestingly, Professor Jeremy discovers that, in the first half of the century, British boardroom culture was dominated by ties of class, wealth and family (and that the situation in the US was similar); in the second half of the century, however, boardroom culture was much more meritocratic. "The advent of a new market-oriented political climate in the UK, and subsequently across the international scene, also pushed both managements and unions in the UK into revising their obsolete class-based attitudes. In some quarters this new ethos was much regretted, for it induced new levels of individualism and unscrupulousness" leading to new regulations, new regulators and a new concern about business ethics.

Sitting in an unregarded corner of the British intellectual landscape, Professor Jeremy has produced book after magisterial book, each in its different way profound, stimulating and moving. A Business History of Britain is his magnum opus. What shines out of it is an unblinkered, comprehensive understanding of all the factors (not merely economic ones) which influence business, thus locating the subject in its rightful place in the world.