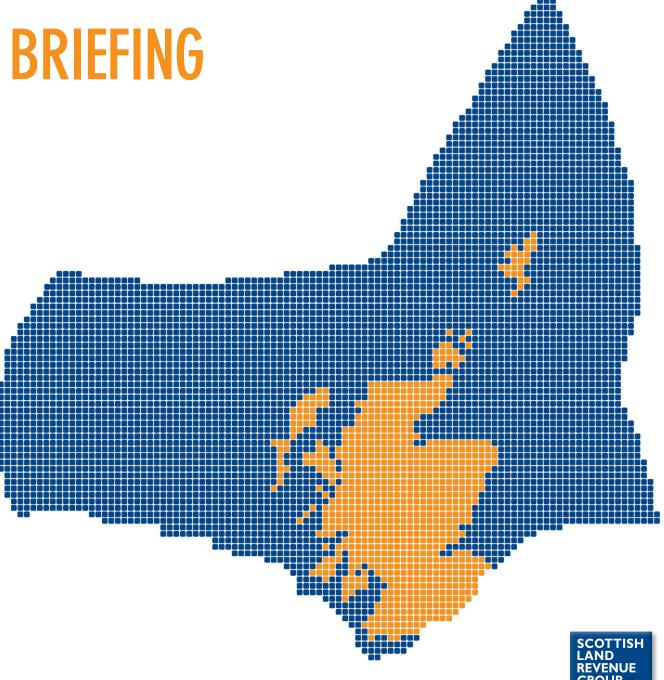
# Scotland's Deadweight Losses BRIEFING



# **Deadweight Losses**

#### (AKA: The Excess Burden of Taxation)

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# Losses attributable to Tax Policy

Central to the notion of Parliamentary democracy are the concepts of accountability and transparency. In relation to fiscal policy, neither condition is fulfilled. National budgets conceal as much as they reveal. They achieve this by withholding information on the "excess burden" of the taxes levied on the population. That burden exacts a cost known as deadweight losses.

- For the OECD countries, it is estimated that the annual loss of wealth and welfare is of the order of \$14 trillion (Harrison 2016a: Ch. 6).
- ➤ For the UK, the loss is nearly £500 billion in wealth and welfare: the annual value which would otherwise be within the population's reach.
- ➤ For Scotland, the loss is about £36 billion. This additional value in wealth and welfare would be achievable if the Westminster and Holyrood governments adopted the nondistortionary tools for raising revenue.

These are shocking numbers. In the case of the UK, GDP in 2016 was about £1.8 trillion. If the government had substituted Adam Smith's Annual Ground Rent for the Income Tax, VAT and the other damaging taxes, GDP would have been something like £2.3 trillion (Harrison 2016b: 7-8). That is because the incentives to work, save and invest favour higher productivity in the way people go about their daily lives.

If these estimates are *remotely* accurate, they reveal something about the art of governance which people can only intuitively sense. The estimates, however, are serious *under-estimates*. One can hardly imagine how life in Scotland, in the highland and islands, in rural and urban centres, would be transformed if people were free to increase the output of wealth and welfare by just half of the estimate stated here.

# Ratio of the burden to the tax-take

The excess burden measures the distortions that arise when taxes alter the prices that are charged for goods and services.

The "gold standard" revenue raiser, against which other fiscal instruments are measured, is the Single Tax on economic rent. Adam Smith advocated this way of raising the State's revenue. Based on what he had learnt from the French Physiocrats (though John Locke had articulated elements of this doctrine in Some Considerations of the Lowering of Interest and the Raising of the Value of Money [1691]), Smith explained:

'Both ground-rents and the ordinary rent of land are a species of revenue which the owner, in many cases, enjoys without any care or attention of his own. Though a part of this revenue should be taken from him in order to defray the expenses of the state, no discouragement will thereby be given to any sort of industry. The annual produce of the land and labour of the society, the real wealth and revenue of the great body of the people, might be the same after such a tax as before. Ground-rents, and the ordinary rent of land, are, therefore, perhaps, the species of revenue which can best bear to have a peculiar tax imposed upon them.'

#### (Smith 1776:Bk.V: 370; emphasis added).

One modern textbook explains the point in these terms:

'Land will not be forced out of use, because land that is very unprofitable will command little rent and so pay little tax. Thus there will be no change in the supply of goods that are produced with the aid of land, and, since there is no change in supply, there can be no change in prices. The tax cannot be passed to the consumers.'

#### (Lipsey 1979:370; emphasis in original).

But while acknowledging that a price is paid for levying taxes on earned incomes, consumption, saving and investment, economists fail to calculate those losses in ways that are intelligible to the people who are victimised by the choice of tax instruments. Instead, economists resign themselves to the doctrine of

'broad-based' taxation. This doctrine is supposed to serve two purposes:

- 1. By spreading the pain, the scale of the damage is reduced.
- 2. Awareness of the damage is minimised (a belief that is challenged by the routine use of the phrase 'tax efficiency' in relation to decisions people make about their investments).

Such fiscal strategies may go a long way to explain the 'democratic deficit'. In the general election of 2015, for example, all four major political parties declared that they would have to increase taxes if given the power by the electorate. The Institute for Fiscal Studies assessed and compared those increases, and concluded:

'None of these parties has provided anything like full details of their fiscal plans for each year of the coming parliament, leaving the electorate somewhat in the dark.'

The IFS, however, failed to provide estimates of the deadweight losses of the proposed tax increases. It declines to calculate the excess burden because it would need to estimate the damage inflicted by all the marginal tax rates in a horrendously complex fiscal regime (Adam 2014).

One economist who was prepared to calculate the losses was Martin Feldstein, professor of economics at Harvard who chaired the US President's Council of Economic Advisers in the 1980s. Using the marginal impact of taxes, he concluded that the damage to the US economy exceeded the ratio of 2:1 – that is, over \$2 of losses in wealth and welfare were incurred for every \$1 raised in taxes. His estimates began with a minimum of \$0.78 per \$1, assuming that a 10% increase in the tax rate increased tax revenues by 10% (Feldstein 1999: 678). But on the more realistic assumption that a 10% increase in the income tax rate would produce significantly less than 10% extra tax revenue (because the fall in income will reduce taxes), he estimated the deadweight loss at \$44/\$26, or \$1.7 loss per \$1 raised. And if the effect on social security revenues was also taken into account, the ratio was \$44/\$21.4 or \$2.06 loss per \$1 of revenue (Feldstein 1999).

In Britain, however, HM Treasury does not consider itself to be under an obligation

to estimate the losses caused by its policies. Following a request under the Freedom of Information Act, it acknowledged an excess burden ratio of 0.3:1. A Treasury official explained:

'The Treasury does not hold any unpublished studies, working papers or any other documentation on the way excess burden estimates are calculated as you have suggested. Particularly, it would not be the Treasury's role to calculate these.'

(Harrison 2006: 43-44).

In fine-tuning its choice of taxes, therefore, we have to assume that HM Treasury is blind as to the actual effects. This creates problems. How, for example, can HM Treasury sensibly operate a "broad-based" tax regime if it is unaware of the relative impact of each tax on the economy and society (see Appendix 1)? The Treasury's estimate is so low that we have to conclude that it is merely conceding that there are costs of compliance with the tax regime, while making no allowance for the damage inflicted on the economy.

#### Sky's the Limit

The estimates given above for the losses incurred by OECD countries, and for Scotland, are based on a 1:1 ratio: a £1 loss for every £1 raised by the "bad" taxes. This is half the estimate from scholars like Feldstein. It is a gross under-estimate, but a starting point from which to encourage democratic debate and further research to inform the democratic process.

The objective must be to aim for a reform of the revenue system so that governance becomes a partner with the private sector in nurturing sustainable growth. Raising output by collecting revenue from economic rent, as Adam Smith stressed, is neutral. In fact, as scholars now acknowledge, the Annual Ground Rent is 'better than neutral' (Tideman 1999; similar insights are in Feldstein 1977). That is because this way of raising the funds to pay for public services positively supports behaviour that increases productivity and the choice of personal lifestyles. The rich diversity of avenues down which people would go to enhance the accumulation of wealth

and welfare is achieved through what Mason Gaffney calls the process of reconciliation (Box 1).

In *The Synergistic City* Gaffney provides some detail on why the total social costs of deadweight losses are much greater than is conventionally measured by — or even conceived of — in little geometrical triangles on 2-dimentional graphs.<sup>1</sup>

#### **Box 1** The Process of Reconciliation

Asked to explain exactly what would happen if America began shifting taxes onto land value, Mason Gaffney, Emeritus Professor of Economics, University of California (Riverside) replied: 'Exactly? The effects are too great, too pervasive to predict exactly.' He itemised the forces that would generate the synergy that would deliver inclusive prosperity by reconciling what are perceived as the 'grand dilemmas'. Shifting the fiscal regime onto the nation's rents would

- **unleash** massive forces of production, exchange, capital formation, and building, forces now trapped and frustrated in the coils of our complex, counterproductive tax mess
- **enhance** the supply of goods and services while simultaneously lowering taxes on the poor and the workers, thus reconciling the needs of both efficiency and equity, in one stroke
- raise taxes on the richest Americans, and alien landowners too, without diluting in the least their incentives to work, to create capital, or to hire workers: it would actually fortify those incentives
- **spring** people loose to renew large parts of our older cities, and rehabilitate what they do not replace
- **enable** school districts to support education at much higher levels than now, without fear of driving away business
- **satisfy** the demand for housing on land that Nature suited for housing, without invading flood plains, steep slopes, remote deserts, and other places that cost society dearly to serve and rescue
- **elevate** the demand for labour, removing people from welfare and keeping them out of jails

Gaffney concluded: 'One could go on at length, but Henry George summed it up in three words: "Association in Equality." Civilization advances when those conditions are met, and declines when they are denied. America has been denying them; we are all paying the price.' \*

\* http://www.wealthandwant.com/docs/Gaffney\_Conspiracy.html Gaffney's lifetime studies are downloadable from www.masongaffney.org

<sup>1.</sup> Prof. Gaffney's Non-point Pollution explains how some problems, while in part caused by conventional taxes, require solutions which lie mostly outside the price system. That is why they tend to be overlooked or dismissed by the most prominent schools of thought on this subject, which are associated with the names of two British economists, A.C. Pigou and Ronald Coase. These problems are not subject to precise measurement using traditional concepts taken from the price system.

# Scotland's tax burden: towards economic independence

The table below, constructed by the Scottish Land Revenue Group, sets out the taxes levied on the people of Scotland. Employing the 1:1 ratio, the Scottish economy and society is shown to be poorer to the tune of £36bn.

HM Treasury would contend that this £36bn estimate was an exaggeration. Such a rebuttal is problematic, for two reasons.

- HM Treasury is in no position to criticise
  the estimates of others because, by its own
  admission, it does not measure the excess
  burden of its tax tools. It lacks the authority,
  therefore, to assess other people's estimates.
- 2. If we accepted the Treasury's ratio of 0.3:1, we are led to the conclusion that the loss to Scotland is *circa* £11 billion. This is the additional value that Scotland would enjoy, if people were free to adjust their behaviour to normal patterns, and given existing endowments of skills, capital and natural resources.

There is a way to resolve the controversy over deadweight losses. In Scotland, Holyrood could institute research leading to the estimation of losses presented in language that people can understand. If the methodology was spelt out, taxpayers could engage in a conversation about the manner in which their actions are distorted in response to fiscal policy. At present that debate is not possible. Transparency requires the full disclosure of all matters relevant to the budget (see the graphic on page 5).

If such a democratic discourse did take place, might that encourage the people of Scotland to request their elected representatives to reinstate

#### **Treaty of Union**

Act Ratifying and approving the Treaty of the Two Kingdoms of Scotland and England, January 16, 1707 (Clause IX)

'That whenever the sum of £1,997,763 8s 4½d shall be enacted by Parliament of Great Britain, to be raised in...England, on land...by a land tax...Scotland shall be charged...£48,000...as the quota of Scotland... by any tax on land...'

# Deadweight Taxes Scotland 2015-16



Revenue 2015-16	UK (£m)	Scotland (£m)	Scotland % of total
Income Tax	168,451	12,195	7.7
Capital Gains Tax	7,060	309	7.2
National Insurance	113,701	9,392	4.4
VAT	115,415	9,638	8.4
Corporation Tax	43,872	3,106	7.1
Corporation Tax Offshore	538	439	81.6 (geographic)
Bank Levy	3,392	222	6.6
Inheritance Tax	4,650	266	5.7
Stamp Tax on Shares	3,320	177	5.3
Insurance Premium Tax	3,293	226	6.9
Customs Duties	3,089	240	7.8
Swiss Capital Tax	32	3	8.3
Total	466,813	36,213	7.7

The following current UK taxes are not included above as, whilst they may include a measure of rent, their equivalents would be retained within or alongside AGR (Annual Ground Rent) because of their desired reducing effects on cosumption, use of resources and pollution: Fuel Duties, Stamp Duty Land Tax, Annual Tax on Enveloped Dwellings, Tobacco Duties, Spirits Duties, Beer Duty, Wine Duties, Cider Duties, Betting and Gaming Duties, Air Passenger Duty, Landfill Tax, Climate Change Levy, Aggregates Levy.

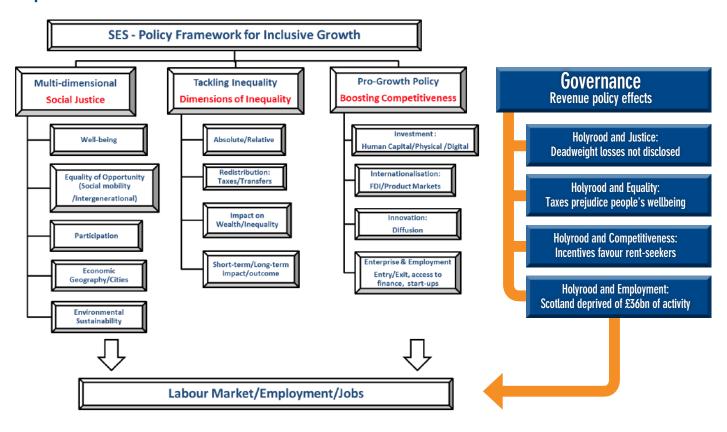
Source: A disaggregation of HMRC tax receipts between England, Wales, Scotland & Northern Ireland, HM Revenue and Customs, October 2016.

Deadweight taxes reduce the size of Scotland's economy by at least £1 for each £1 raised. They impose losses on Scotland of at least £36bn a year. Replacing them with AGR (Annual Ground Rent) would release us from the economic straitjacket that starves public services. Devolved powers allow Holyrood to start work immediately.

the Land Tax — in modernised form — which prevailed at the time of the Treaty of Union? By beginning the process of decoupling the Scottish economy from the tax regime favoured

by Westminster, the people of Scotland would begin to enjoy a form of independence that would not be available to them within the constraints imposed by the European Union.

### Holyrood's Policy Framework for Inclusive Growth A pivotal consideration needs to be included: Governance



#### Some other studies

#### **USA**

The Washington, DC-based Cato Institute has called on Congress to provide assessments of deadweight losses. Its report states:

'Estimates vary depending on the type of tax, but the "marginal excess burden" of federal taxes most likely ranges from 14 to 52 cents per dollar of tax revenue, averaging about 44 cents for all federal taxes.' (Conover 2010)

This range of estimates is below the rate reported by some academic economists. Nonetheless, the negative impact arising from the way the funds are raised is awesome in its scale. For example, the projected 10-year budget cost of the Patient Protection and Affordable

Care Act was more than \$1 trillion, bequeathing a hidden cost estimated at between \$157bn and \$494bn "in the form of reduced economic output" (*ibid*, p.1).

If provided with such information by their elected representatives, people would realise that, even if the lowest estimates of excess burden were correct, the losses far eclipse the current fiscal needs of any of the G7 economies. In other words, if people were free to achieve their potential — that is, free from distortionary taxes — there would be no shortage of funds to pay for the public services they need.

#### **Australia**

The advantage of studying the impact of the tax regime in relation to the Australian economy is that producers and consumers are liable to the Land Tax. One of the problems with studies in Australia, however, is the neoclassical economist's tendency to slip between referring to land (which is fixed in supply) to talking about "capital" (which is infinitely reproducible). An example is a study by the Australian Treasury which discusses Economic Rent. It states:

'The location-specific factors that give rise to rents are relatively immobile and hence less affected by tax rates. The larger the extent of location-specific factors, the smaller the effect of company tax on investment, labour productivity, wages and economic activity per dollar of revenue collected. That is, the larger the extent of location-specific factors, the more efficient company tax would be and the greater the share of the incidence of company tax that would be borne by owners of capital, rather than workers.'

#### (Australian Treasury 2010. Emphasis added).

In fact, the incidence would fall on the owners of the location — land. That may be the company (if it is a freeholder); but the charge would be on economic rents, *not* the profits of capital. The difference is vital: it determines whether investors are in the business of achieving maximum *economic efficiency*, or maximum *tax efficiency*.

Australia, it must be noted, does at least try to provide its population with some sense of the losses inflicted by conventional taxes. The federal government, for example, commissioned KPMG to undertake a study of the tax burden (KPMG 2010). It deployed the traditional method to illustrate the burden. using the supply and demand curves on a graph, to identify the loss as a result of the impact of the tax-take on market prices. Its report includes the conventional wisdoms, such as "the excess burden of a tax is generally roughly proportional to the square of the tax rate" (p.18). Such formulas do not assist the general public in understanding what is done in their name.2 To achieve some measure of comprehension of the issues at stake, it may be that information provided in the blogosphere is more informative for the general public (see Appendix 2).

<sup>2.</sup> The methodology employed by KPMG results in a serious understatement of the gains to be achieved through the correct application of an Annual Ground Rent. It states (section 5.3.2, p.52) that the average excess burden of the Land Tax is 6 cents on the dollar. Correctly framed, the Land Tax should result in no excess burden.

#### **Appendix 1**

# The Relative Damage of Taxation

Mason Gaffney, emeritus professor of economics at the University of California (Riverside), grades the revenue raisers, ranking according to their good effects on output and equity (fairness) as follows:

- 1. Best: Land value tax
  - a. At national level
  - b. At State or Provincial level
  - c. At local levels
- 2. Pigovian taxes
- 3. Severance taxes (on mineral extraction, etc.)
- 4. General property tax
- 5. Corporation income tax
- 6. Personal income tax
- 7. Payroll tax
- 8. Excise taxes
- 9. VAT

For Mason Gaffney's detailed critique of the VAT, as employed by the European Union, see "Europe's fatal affair with VAT" in Harrison and Gaffney (2016). Based on the VAT revenue collected within the European economic theatre, circa €1 trillion is lost to the citizens of the EU every year.

#### Appendix 2

#### **An Australian Dissenter**

## The Real Excess Burden: an overarching approach

by Bryan Kavanagh on 1 March 2017 in Blogs, Capitalism http://www.sharetherents.org/real-excessburden-overarching-approach/

Guest blogger Bryan Kavanagh challenges the way economists assess the damage inflicted by taxes on the economy. He describes his method by estimating the impact of the tax burden on Australia. Land price bubbles are part of the equation. There is, he believes, a way of converting the losses into huge gains: by switching the revenue system from conventional taxes onto the direct collection of revenue from the rent of land and nature's resources.

I'm not a fan of economists who are able to equate the rent flowing from land with the returns to manufactured capital without experiencing a frisson of self-reproach. That income from land should be distinguished from that of capital because it has not been *earned* by its recipients is, of course, disputed by the frisson-free.

Nor does my training as a valuer of real estate allow me to see escalating land prices simply as a function of undersupply, excessive demand, zoning controls, population increase, or some combination of these influences. The *primary* factor will always be the extent to which land rent is permitted to remain the property of individuals or groups, because land price is first and foremost the manifest private capitalization of its *publicly-generated* rent. I draw this conclusion from fact, *without* invoking the Bible of Christian and Jew to enjoin Leviticus 25:23 or Ecclesiastes 5:9, and with more than a little help from Sir William Petty, Adam Smith, David Ricardo and Henry George.

And I trust I may be forgiven when I demur from conventional economic wisdom of keeping separate the losses brought about by escalating land prices, recession and unemployment from the excess burdens of taxation? As a valuer, I've not been given the power granted economists to divorce these ills from a marriage which generates repetitive land price bubbles, economic recession, unemployment and myriad accompanying social pathologies — so I have to leave them conjoined in their unholy alliance.

These declamations out of the way, let me attempt to assess the *real* excess burden of Australian land price bubbles and taxation from 1972 until 2006. I'll leave it to others to update these findings to current date.

#### Methodology

Whereas studies show the capture of the income from land (the *common wealth*?) carries little or no deadweight—because it's in the nature of a rent which can't be passed on in prices—arbitrary penalty taxes and land prices certainly do apply their excess burdens. Indeed, both fracture economies and civil society. Evidence? Maybe the state of world's economies will attest?

In Unlocking the Riches of Oz: A case study of the social costs of real estate bubbles 1972 to 2006 (2007) I suggested world property markets were about to experience a crash, and that the Australian recessions of 1974-75, 1982-83 and 1991-92 followed immediately on the heels of the bursting of land price bubbles in 1973, 1981 and 1988-89 respectively. I argued

'elimination of bubbles also implies elimination of cycles, and therefore of the retrogression in growth that occurs during each too-politely named 'business cycle'. Therefore, if we start with Australian GDP for the financial year ending 1972, expressed in 2006 prices, and assume that the highest real year-on-year GDP growth figure achieved since then had applied in every year, GDP for the 2006 financial year would have been a staggering \$1.98 trillion, that is, more than \$1 trillion higher than it actually reached.'

I held that to capture at least half the economic rent of land would have obviated Australian land price bubble-induced recessions if it were to replace some of the deadweight of existing taxes. But isn't adopting the *highest* year-on-year growth of 5.53% during that 34-year period a bit of a stretch? Not at all! The effect of introducing a land rent regime is to reduce land prices immediately and, thereafter, the levels of mortgages and private debt.

This would stimulate and smooth demand over the term, and economic activity would increase accordingly. Whilst land prices would decrease, the reward to earned incomes must increase, and the upsurge in prosperity would act to increase the land rent revenue base. I claim the 5.53% smoothed economic growth adopted from 1972 to 2006, — sans land price bubbles and their recessions — would be found to be both eminently attainable and conservative.

Here are the sums:

ended (2006 \$m) growth	Fin. year	GDP	YoY	GDP growth	Taxation	Indicated	
1973 328,766 2.98% 336,900 70,749 8,134 1974 342,597 4.21% 355,516 77,492 12,919 recessi 1975 345,094 0.73% 375,160 85,322 30,066 1976 355,793 3.10% 395,890 90,652 40,097 1977 367,583 3.31% 417,765 94,411 50,182 1978 370,987 0.93% 440,849 94,750 69,862 1979 386,752 4.25% 465,209 95,385 78,457 1980 398,625 3.07% 490,914 101,004 92,289 1981 412,426 3.46% 518,040 108,656 105,614 1982 424,848 3.01% 546,665 112,791 121,817 recessi 1983 415,618 -2.17% 576,871 112,335 161,253 1984 433,872 4.39% 608,747 113,824 174,875 1985 457,846 5.53% 642,384 127,987 184,538 1986 478,142 4.43% 677,879 134,022 199,737 1987 489,496 2.37% 715,336 141,249 225,840 1988 514,719 5.15% 754,863 148,271 240,144 1989 533,866 3.72% 796,573 152,351 262,707 1990 554,479 3.86% 840,589 156,194 286,110 recessi 1991 551,620 -0.52% 887,036 156,579 335,416 1992 551,814 0.04% 936,050 149,281 384,236 1993 571,295 3.53% 987,773 151,235 416,478 1994 595,968 4.32% 1,042,353 158,587 446,385 1995 622,082 4.38% 1,099,949 172,468 477,867 1996 647,656 411% 1,160,728 184,111 513,072 1997 672,612 3.85% 1,224,865 196,067 552,253 1998 703,839 4.64% 1,292,546 199,857 588,707 1999 739,169 5.02% 1,363,967 213,482 624,798 2000 769,157 4.06% 1,439,334 226,972 670,177 2001 784,188 1,95% 1,518,866 236,941 734,678 2002 813,481 3.74% 1,602,792 233,157 789,311 2003 839,512 3.20% 1,691,356 248,564 851,844 2004 872,855 3,97% 1,784,813 259,126 911,958 2005 896,366 2.69% 1,883,435 269,784 987,069 2006 922,494 2,91% 1,987,506 274,157 1,065,012	ended	(2006 \$m)	growth	@5.53% pa	(2006 \$m)	deadweight	
1974 342,597 4.21% 355,516 77,492 12,919 recessi 1975 345,094 0.73% 375,160 85,322 30,066 1976 355,793 3.10% 395,890 90,652 40,097 1977 367,583 3.31% 417,765 94,411 50,182 1978 370,987 0.93% 440,849 94,750 69,862 1979 386,752 4.25% 465,209 95,385 78,457 1980 398,625 3.07% 490,914 101,004 92,289 1981 412,426 3.46% 518,040 108,656 105,614 1982 424,848 3.01% 546,665 112,791 121,817 recessi 1983 415,618 -2.17% 576,871 112,335 161,253 1984 433,872 4.39% 608,747 113,824 174,875 1985 457,846 5.53% 642,384 127,987 184,538 1986 478,142 4.43% 677,879 134,022 199,737 1987 489,496 2.37% 715,336 141,249 225,840 1988 514,719 5.15% 754,863 148,271 240,144 1989 533,866 3.72% 796,573 152,351 262,707 1990 554,479 3.86% 840,589 156,194 226,912 199,737 1992 551,814 0.04% 936,050 149,281 384,236 1993 571,295 3.53% 987,773 151,235 416,478 1994 595,968 4.32% 1,004,2353 158,587 446,385 1995 622,082 4.38% 1,099,949 172,468 477,867 1999 739,169 5.02% 1,363,967 213,482 624,798 2000 769,157 4.06% 1,439,334 226,972 670,177 2001 784,188 1.95% 1,518,866 236,941 734,678 2002 813,481 3.74% 1,602,792 233,157 789,311 2003 839,512 3.20% 1,691,356 248,564 851,844 2004 872,855 3.97% 1,784,813 259,126 911,958 2006 922,494 2.91% 1,987,506 274,157 1,065,012 Peak growth 5.53% 32,178,775 5,417,932 12,693,899	1972	319,259		319,259	70,119	(2006 \$m)	
1975 345,094 0.73% 375,160 85,322 30,066 1976 355,793 3.10% 395,890 90,652 40,097 1977 367,583 3.31% 417,765 94,411 50,182 1978 370,987 0.93% 440,849 94,750 69,862 1979 386,752 4.25% 465,209 95,385 78,457 1980 398,625 3.07% 490,914 101,004 92,289 1981 412,426 3.46% 518,040 108,656 105,614 1982 424,848 3.01% 546,665 112,791 121,817 recessi 1983 415,618 -2.17% 576,871 112,335 161,253 1984 433,872 4.39% 608,747 113,824 174,875 1985 457,846 5.53% 642,384 127,987 184,538 1986 478,142 4.43% 677,879 134,022 199,737 1987 489,496 2.37% 715,336 141,249 225,840 1988 514,719 5.15% 754,863 148,271 240,144 1989 533,866 3.72% 796,573 152,351 262,707 1990 554,479 3.86% 840,589 156,194 286,110 recessi 1991 551,620 -0.52% 887,036 156,579 335,416 1992 551,814 0.04% 936,050 149,281 384,236 1993 571,295 3.53% 987,773 151,235 416,478 1994 595,968 4.32% 1,042,353 158,587 446,385 1995 622,082 4.38% 1,099,949 172,468 477,867 1996 647,656 4.11% 1,160,728 184,111 513,072 1997 672,612 3.85% 1,224,865 196,067 552,253 1998 703,839 4.64% 1,292,546 199,857 588,707 1999 739,169 5.02% 1,363,967 213,482 624,798 2000 769,157 4.06% 1,439,334 226,972 670,177 2001 784,188 1,95% 1,518,866 236,941 734,678 2002 813,841 3.74% 1,602,792 233,157 789,311 2003 839,512 3.20% 1,691,356 248,564 851,844 2004 872,855 3.97% 1,784,813 259,126 911,958 2005 896,366 2.69% 1,883,435 269,784 987,069 2006 922,494 2,91% 1,987,506 274,157 1,065,012	1973	328,766	2.98%	336,900	70,749	8,134	
1976 355,793 3.10% 395,890 90,652 40,097 1977 367,583 3.31% 417,765 94,411 50,182 1978 370,987 0.93% 440,849 94,750 69,862 1979 386,752 4.25% 465,209 95,385 78,457 1980 398,625 3.07% 490,914 101,004 92,289 1981 412,426 3.46% 518,040 108,656 105,614 1982 424,848 3.01% 546,665 112,791 121,817 recessi 1983 415,618 -2.17% 576,871 112,335 161,253 1984 433,872 4.39% 608,747 113,824 174,875 1985 457,846 5.53% 642,384 127,987 184,538 1986 478,142 4.43% 677,879 134,022 199,737 1987 489,496 2.37% 715,336 141,249 225,840 1988 514,719 5.15% 754,863 148,271 240,144 1989 533,866 3.72% 796,573 152,351 262,707 1990 554,479 3.86% 840,589 156,194 286,110 recessi 1991 551,620 -0.52% 887,036 156,579 335,416 1992 551,814 0.04% 936,050 149,281 384,236 1993 571,295 3.53% 987,773 151,235 416,478 1994 595,968 4.32% 1,042,353 158,587 446,385 1995 622,082 4.38% 1,099,949 172,468 477,867 1996 647,656 4.11% 1,160,728 184,111 513,072 1997 672,612 3.85% 1,224,865 196,067 552,253 1998 703,839 4.64% 1,292,546 199,857 588,707 1999 739,169 5.02% 1,363,967 213,482 624,798 2000 769,157 4.06% 1,439,334 226,972 670,177 2001 784,188 1,95% 1,518,866 236,941 734,678 2002 813,481 3.74% 1,602,792 233,157 789,311 2003 839,512 3.20% 1,691,356 248,564 851,844 2004 872,855 3.97% 1,784,813 259,126 911,958 2005 896,366 2.69% 1,883,435 269,784 987,069 2006 922,494 2,91% 1,987,506 274,157 1,065,012	1974	342,597	4.21%	355,516	77,492	12,919	recessi
1977 367,583 3.31% 417,765 94,411 50,182 1978 370,987 0.93% 440,849 94,750 69,862 1979 386,752 4.25% 465,209 95,385 78,457 1980 398,625 3.07% 490,914 101,004 92,289 1981 412,426 3.46% 518,040 108,656 105,614 1982 424,848 3.01% 546,665 112,791 121,817 recessi 1983 415,618 -2.17% 576,871 112,335 161,253 1984 433,872 4.39% 608,747 113,824 174,875 1985 457,846 5.53% 642,384 127,987 184,538 1986 478,142 4.43% 677,879 134,022 199,737 1987 489,496 2.37% 715,336 141,249 225,840 1988 514,719 5.15% 754,863 148,271 240,144 1989 533,866 3.72% 796,573 152,351 262,707 1990 554,479 3.86% 840,589 156,194 286,110 recessi 1991 551,620 -0.52% 887,036 156,579 335,416 1992 551,814 0.04% 936,050 149,281 384,236 1993 571,295 3.53% 987,773 151,235 416,478 1994 595,968 4.32% 1,042,353 158,587 446,385 1995 622,082 4.38% 1,099,949 172,468 477,867 1999 739,169 5.02% 1,363,967 213,482 624,798 2000 769,157 4.06% 1,439,334 226,972 670,177 2001 784,188 1.95% 1,518,866 236,941 734,678 2002 813,481 3.74% 1,602,792 233,157 789,311 2003 839,512 3.20% 1,691,356 248,564 851,844 2004 872,855 3.97% 1,784,813 259,126 911,958 2005 896,366 2.69% 1,883,435 269,784 987,069 2006 922,494 2.91% 1,987,506 274,157 1,065,012 Peak growth 5.53% 32,778,775 5,417,932 12,693,899	1975	345,094	0.73%	375,160	85,322	30,066	
1978 370,987 0.93% 440,849 94,750 69,862 1979 386,752 4.25% 465,209 95,385 78,457 1980 398,625 3.07% 490,914 101,004 92,289 1981 412,426 3.46% 518,040 108,656 105,614 1982 424,848 3.01% 546,665 112,791 121,817 recessi 1983 415,618 -2.17% 576,871 112,335 161,253 1984 433,872 4.39% 608,747 113,824 174,875 1985 457,846 5.53% 642,384 127,987 184,538 1986 478,142 4.43% 677,879 134,022 199,737 1987 489,496 2.37% 715,336 141,249 225,840 1988 514,719 5.15% 754,863 148,271 240,144 1989 533,866 3.72% 796,573 152,351 262,707 1990 554,479 3.86% 840,589 156,194 286,110 recessi 1991 551,620 -0.52% 887,036 156,579 335,416 1992 551,814 0.04% 936,050 149,281 384,236 1993 571,295 3.53% 987,773 151,235 416,478 1994 595,968 4.32% 1,042,353 158,587 446,385 1995 622,082 4.38% 1,099,949 172,468 477,867 1997 672,612 3.85% 1,224,865 196,667 552,253 1998 703,839 4.64% 1,292,546 199,857 588,707 1999 739,169 5.02% 1,363,967 213,482 624,798 2000 769,157 4.06% 1,439,334 226,972 670,177 2001 784,188 1.95% 1,518,866 236,941 734,678 2002 813,481 3.74% 1,602,792 233,157 789,311 2003 839,512 3.20% 1,691,356 248,564 851,844 2004 872,855 3.97% 1,784,813 259,126 911,958 2005 896,366 2.69% 1,883,435 269,784 987,099 2006 922,494 2,91% 1,987,506 274,157 1,065,012 Peak growth 5.53% 32,178,775 5,417,932 12,693,899	1976	355,793	3.10%	395,890	90,652	40,097	
1979 386,752 4.25% 465,209 95,385 78,457 1980 398,625 3.07% 490,914 101,004 92,289 1981 412,426 3.46% 518,040 108,656 105,614 1982 424,848 3.01% 546,665 112,791 121,817 recessi 1983 415,618 -2.17% 576,871 112,335 161,253 1984 433,872 4.39% 608,747 113,824 174,875 1985 457,846 5.53% 642,384 127,987 184,538 1986 478,142 4.43% 677,879 134,022 199,737 1987 489,496 2.37% 715,336 141,249 225,840 1988 514,719 5.15% 754,863 148,271 240,144 1989 533,866 3.72% 796,573 152,351 262,707 1990 554,479 3.86% 840,589 156,154 286,110 recessi 1991 551,620 -0.52% 887,036 156,579 335,416 1992 551,814 0.04% 936,050 149,281 384,236 1993 571,295 3.53% 987,773 151,235 416,478 1994 595,968 4.32% 1,042,353 158,587 446,385 1995 622,082 4.38% 1,099,949 172,468 477,867 1996 647,656 4.11% 1,160,728 184,111 513,072 1997 672,612 3.85% 1,224,865 196,067 552,253 1998 703,839 4.64% 1,292,546 199,857 588,707 1999 739,169 5.02% 1,363,967 213,482 624,798 2000 769,157 4.06% 1,439,334 226,972 670,177 2001 784,188 1,95% 1,518,866 236,941 734,678 2002 813,481 3.74% 1,602,792 233,157 789,311 2003 839,512 3.20% 1,691,356 248,564 851,844 2004 872,855 3,97% 1,784,813 259,126 911,958 2005 896,366 2.69% 1,883,435 269,784 987,069 2006 922,494 2,91% 1,987,506 274,157 1,065,012	1977	367,583	3.31%	417,765	94,411	50,182	
1980 398,625 3.07% 490,914 101,004 92,289 1981 412,426 3.46% 518,040 108,656 105,614 1982 424,848 3.01% 546,665 112,791 21,817 recessi 1983 415,618 -2.17% 576,871 112,335 161,253 1984 433,872 4.39% 608,747 113,824 174,875 1985 457,846 5.53% 642,384 127,987 184,538 1986 478,142 4.43% 677,879 134,022 199,737 1987 489,496 2.37% 715,336 141,249 225,840 1988 514,719 5.15% 754,863 148,271 240,144 1989 533,866 3.72% 796,573 152,351 262,707 1990 554,479 3.86% 840,589 156,194 286,110 recessi 1991 551,620 -0.52% 887,036 156,579 335,416 1992 551,814 0.04% 936,050 149,281 384,236 1993 571,295 3.53% 987,773 151,235 416,478 1994 595,968 4.32% 1,042,353 158,587 446,385 1995 622,082 4.38% 1,099,949 172,468 477,867 1996 647,656 4.11% 1,160,728 184,111 513,072 1997 672,612 3.85% 1,224,865 196,067 552,253 1998 703,839 4.64% 1,292,546 199,857 588,707 1999 739,169 5.02% 1,363,967 213,482 624,798 2000 769,157 4.06% 1,439,334 226,972 670,177 2001 784,188 1,95% 1,518,866 236,941 734,678 2002 813,881 3.74% 1,602,792 233,157 789,311 2003 839,512 3.20% 1,691,356 248,564 851,844 2004 872,855 3.97% 1,784,813 259,126 911,958 2005 896,366 2.69% 1,883,435 269,784 987,069 2006 922,494 2,91% 1,987,506 274,157 1,065,012	1978	370,987	0.93%	440,849	94,750	69,862	
1981 412,426 3.46% 518,040 108,656 105,614 1982 424,848 3.01% 546,665 112,791 121,817 recessi 1983 415,618 -2.17% 576,871 112,335 161,253 1984 433,872 4.39% 608,747 113,824 174,875 1985 457,846 5.53% 642,384 127,987 184,538 1986 478,142 4.43% 677,879 134,022 199,737 1987 489,496 2.37% 715,336 141,249 225,840 1988 514,719 5.15% 754,863 148,271 240,144 1989 533,866 3.72% 796,573 152,351 262,707 1990 554,479 3.86% 840,589 156,194 286,110 recessi 1991 551,620 -0.52% 887,036 156,579 335,416 1992 551,814 0.04% 936,050 149,281 384,236 1993 571,295 3.53% 987,773 151,235 416,478 1994 595,968 4.32% 1,042,353 158,587 446,385 1995 622,082 4.38% 1,099,949 172,468 477,867 1996 647,656 4.11% 1,160,728 184,111 513,072 1997 672,612 3.85% 1,224,865 196,067 552,253 1998 703,839 4.64% 1,292,546 199,857 588,707 1999 739,169 5.02% 1,363,967 213,482 624,798 2000 769,157 4.06% 1,439,334 226,972 670,177 2001 784,188 1,95% 1,518,866 236,941 734,678 2002 813,481 3.74% 1,602,792 233,157 789,311 2003 839,512 3.20% 1,691,356 248,564 851,844 2004 872,855 3.97% 1,784,813 259,126 911,958 2005 896,366 2.69% 1,883,435 269,784 987,069 2006 922,494 2,91% 1,987,506 274,157 1,065,012 Peak growth 5.53% 32,178,775 5,417,932 12,693,899	1979	386,752	4.25%	465,209	95,385	78,457	
1982 424,848 3.01% 546,665 112,791 121,817 recessi 1983 415,618 -2.17% 576,871 112,335 161,253 1984 433,872 4.39% 608,747 113,824 174,875 1985 457,846 5.53% 642,384 127,987 184,538 1986 478,142 4.43% 677,879 134,022 199,737 1987 489,496 2.37% 715,336 141,249 225,840 1988 514,719 5.15% 754,863 148,271 240,144 1989 533,866 3.72% 796,573 152,351 262,707 1990 554,479 3.86% 840,589 156,194 286,110 recessi 1991 551,620 -0.52% 887,036 156,579 335,416 1992 551,814 0.04% 936,050 149,281 384,236 1993 571,295 3.53% 987,773 151,235 416,478 1994 595,968 4.32% 1,042,353 158,587 446,385 1995 622,082 4.38% 1,099,949 172,468 477,867 1996 647,656 4.11% 1,160,728 184,111 513,072 1997 672,612 3.85% 1,224,865 196,067 552,253 1998 703,839 4.64% 1,292,546 199,857 588,707 1999 739,169 5.02% 1,363,967 213,482 624,798 2000 769,157 4.06% 1,439,334 226,972 670,177 2001 784,188 1,95% 1,518,866 236,941 734,678 2002 813,481 3.74% 1,602,792 233,157 789,311 2003 839,512 3.20% 1,691,356 248,564 851,844 2004 872,855 3.97% 1,784,813 259,126 911,958 2006 922,494 2,91% 1,987,506 274,157 1,065,012 Peak growth 5.53% 32,178,775 5,417,932 12,693,899	1980	398,625	3.07%	490,914	101,004	92,289	
1983 415,618 -2.17% 576,871 112,335 161,253 1984 433,872 4.39% 608,747 113,824 174,875 1985 457,846 5.53% 642,384 127,987 184,538 1986 478,142 4.43% 677,879 134,022 199,737 1987 489,496 2.37% 715,336 141,249 225,840 1988 514,719 5.15% 754,863 148,271 240,144 1989 533,866 3.72% 796,573 152,351 262,707 1990 554,479 3.86% 840,589 156,194 286,110 recessi 1991 551,620 -0.52% 887,036 156,579 335,416 1992 551,814 0.04% 936,050 149,281 384,236 1993 571,295 3.53% 987,773 151,235 416,478 1994 595,968 4.32% 1,042,353 158,587 446,385 1995 622,082 4.38% 1,099,949 172,468 477,867 1996 647,656 4.11% 1,160,728 184,111 513,072 1997 672,612 3.85% 1,224,865 196,067 552,253 1998 703,839 4.64% 1,292,546 199,857 588,707 1999 739,169 5.02% 1,363,967 213,482 624,798 2000 769,157 4.06% 1,439,334 226,972 670,177 2001 784,188 1,95% 1,518,866 236,941 734,678 2002 813,481 3.74% 1,602,792 233,157 789,311 2003 839,512 3.20% 1,691,356 248,564 851,844 2004 872,855 3,97% 1,784,813 259,126 911,958 2005 896,366 2.69% 1,883,435 269,784 987,069 2006 922,494 2,91% 1,987,506 274,157 1,065,012 Peak growth 5.53% 32,778,775 5,417,932 12,693,899	1981	412,426	3.46%	518,040	108,656	105,614	
1984 433,872 4.39% 608,747 113,824 174,875 1985 457,846 5.53% 642,384 127,987 184,538 1986 478,142 4.43% 677,879 134,022 199,737 1987 489,496 2.37% 715,336 141,249 225,840 1988 514,719 5.15% 754,863 148,271 240,144 1989 533,866 3.72% 796,573 152,351 262,707 1990 554,479 3.86% 840,589 156,194 286,110 recessi 1991 551,620 0.52% 887,036 156,579 335,416 1992 551,814 0.04% 936,050 149,281 384,236 1993 571,295 3.53% 987,773 151,235 416,478 1994 595,968 4.32% 1,042,353 158,587 446,385 1995 622,082 4.38% 1,099,949 172,468 477,867 1996 647,656 4.11% 1,160,728 184,111 513,072 1997 672,612 3.85% 1,224,865 196,067 552,253 1998 703,839 4.64% 1,292,546 199,857 588,707 1999 739,169 5.02% 1,363,967 213,482 624,798 2000 769,157 4.06% 1,433,334 226,972 670,177 2001 784,188 1,95% 1,518,866 236,941 734,678 2002 813,481 3.74% 1,602,792 233,157 789,311 2003 839,512 3.20% 1,691,356 248,564 851,844 2004 872,855 3.97% 1,784,813 259,126 911,958 2005 896,366 2.69% 1,883,435 269,784 987,069 2006 922,494 2,91% 1,987,506 274,157 1,065,012 Peak growth 5.53% 32,178,775 5,417,932 12,693,899	1982	424,848	3.01%	546,665	112,791	121,817	recessi
1985 457,846 5.53% 642,384 127,987 184,538 1986 478,142 4.43% 677,879 134,022 199,737 1987 489,496 2.37% 715,336 141,249 225,840 1988 514,719 5.15% 754,863 148,271 240,144 1989 533,866 3.72% 796,573 152,351 262,707 1990 554,479 3.86% 840,589 156,194 286,110 recessi 1991 551,620 -0.52% 887,036 156,579 335,416 1992 551,814 0.04% 936,050 149,281 384,236 1993 571,295 3.53% 987,773 151,235 416,478 1994 595,968 4.32% 1,042,353 158,587 446,385 1995 622,082 4.38% 1,099,949 172,468 477,867 1996 647,656 4.11% 1,160,728 184,111 513,072 1997 672,612 3.85% 1,224,865 196,067 552,253 1998 703,839 4.64% 1,292,546 199,857 588,707 1999 739,169 5.02% 1,363,967 213,482 624,798 2000 769,157 4.06% 1,439,334 226,972 670,177 2001 784,188 1.95% 1,518,866 236,941 734,678 2002 813,481 3.74% 1,602,792 233,157 789,311 2003 839,512 3.20% 1,691,356 248,564 851,844 2004 872,855 3.97% 1,784,813 259,126 911,958 2005 896,366 2.69% 1,883,435 269,784 987,069 2006 922,494 2.91% 1,987,506 274,157 1,065,012 Peak growth 5.53% 32,778,775 5,417,932 12,693,899	1983	415,618	-2.17%	576,871	112,335	161,253	
1986         478,142         4.43%         677,879         134,022         199,737           1987         489,496         2.37%         715,336         141,249         225,840           1988         514,719         5.15%         754,863         148,271         240,144           1989         533,866         3.72%         796,573         152,351         262,707           1990         554,479         3.86%         840,589         156,194         286,110 recessi           1991         551,620         -0.52%         887,036         156,579         335,416           1992         551,814         0.04%         936,050         149,281         384,236           1993         571,295         3.53%         987,773         151,235         416,478           1994         595,968         4.32%         1,042,353         158,587         446,385           1995         622,082         4.38%         1,099,949         172,468         477,867           1996         647,656         4.11%         1,160,728         184,111         513,072           1997         672,612         3.85%         1,224,865         196,067         552,253           1998         703,839	1984	433,872	4.39%	608,747	113,824	174,875	
1987         489,496         2.37%         715,336         141,249         225,840           1988         514,719         5.15%         754,863         148,271         240,144           1989         533,866         3.72%         796,573         152,351         262,707           1990         554,479         3.86%         840,589         156,194         286,110 recessi           1991         551,620         -0.52%         887,036         156,579         335,416           1992         551,814         0.04%         936,050         149,281         384,236           1993         571,295         3.53%         987,773         151,235         416,478           1994         595,968         4.32%         1,042,353         158,587         446,385           1995         622,082         4.38%         1,099,949         172,468         477,867           1996         647,656         4.11%         1,160,728         184,111         513,072           1997         672,612         3.85%         1,224,865         196,067         552,253           1998         703,839         4.64%         1,292,546         199,857         588,707           1999         739,169	1985	457,846	5.53%	642,384	127,987	184,538	
1988         514,719         5.15%         754,863         148,271         240,144           1989         533,866         3.72%         796,573         152,351         262,707           1990         554,479         3.86%         840,589         156,194         286,110 recessi           1991         551,620         -0.52%         887,036         156,579         335,416           1992         551,814         0.04%         936,050         149,281         384,236           1993         571,295         3.53%         987,773         151,235         416,478           1994         595,968         4.32%         1,042,353         158,587         446,385           1995         622,082         4.38%         1,099,949         172,468         477,867           1996         647,656         4.11%         1,160,728         184,111         513,072           1997         672,612         3.85%         1,224,865         196,067         552,253           1998         703,839         4.64%         1,292,546         199,857         588,707           1999         739,169         5.02%         1,363,967         213,482         624,798           2000         769,157	1986	478,142	4.43%	677,879	134,022	199,737	
1989         533,866         3.72%         796,573         152,351         262,707           1990         554,479         3.86%         840,589         156,194         286,110 recessi           1991         551,620         -0.52%         887,036         156,579         335,416           1992         551,814         0.04%         936,050         149,281         384,236           1993         571,295         3.53%         987,773         151,235         416,478           1994         595,968         4.32%         1,042,353         158,587         446,385           1995         622,082         4.38%         1,099,949         172,468         477,867           1996         647,656         4.11%         1,160,728         184,111         513,072           1997         672,612         3.85%         1,224,865         196,067         552,253           1998         703,839         4.64%         1,292,546         199,857         588,707           1999         739,169         5.02%         1,363,967         213,482         624,798           2000         769,157         4.06%         1,439,334         226,972         670,177           2001         784,188 <td>1987</td> <td>489,496</td> <td>2.37%</td> <td>715,336</td> <td>141,249</td> <td>225,840</td> <td></td>	1987	489,496	2.37%	715,336	141,249	225,840	
1990         554,479         3.86%         840,589         156,194         286,110 recessi           1991         551,620         -0.52%         887,036         156,579         335,416           1992         551,814         0.04%         936,050         149,281         384,236           1993         571,295         3.53%         987,773         151,235         416,478           1994         595,968         4.32%         1,042,353         158,587         446,385           1995         622,082         4.38%         1,099,949         172,468         477,867           1996         647,656         4.11%         1,160,728         184,111         513,072           1997         672,612         3.85%         1,224,865         196,067         552,253           1998         703,839         4.64%         1,292,546         199,857         588,707           1999         739,169         5.02%         1,363,967         213,482         624,798           2000         769,157         4.06%         1,439,334         226,972         670,177           2001         784,188         1.95%         1,518,866         236,941         734,678           2002         813,481<	1988	514,719	5.15%	754,863	148,271	240,144	
1991         551,620         -0.52%         887,036         156,579         335,416           1992         551,814         0.04%         936,050         149,281         384,236           1993         571,295         3.53%         987,773         151,235         416,478           1994         595,968         4.32%         1,042,353         158,587         446,385           1995         622,082         4.38%         1,099,949         172,468         477,867           1996         647,656         4.11%         1,160,728         184,111         513,072           1997         672,612         3.85%         1,224,865         196,067         552,253           1998         703,839         4.64%         1,292,546         199,857         588,707           1999         739,169         5.02%         1,363,967         213,482         624,798           2000         769,157         4.06%         1,439,334         226,972         670,177           2001         784,188         1.95%         1,518,866         236,941         734,678           2002         813,481         3.74%         1,602,792         233,157         789,311           2003         839,512	1989	533,866	3.72%	796,573	152,351	262,707	
1992 551,814 0.04% 936,050 149,281 384,236 1993 571,295 3.53% 987,773 151,235 416,478 1994 595,968 4.32% 1,042,353 158,587 446,385 1995 622,082 4.38% 1,099,949 172,468 477,867 1996 647,656 4.11% 1,160,728 184,111 513,072 1997 672,612 3.85% 1,224,865 196,067 552,253 1998 703,839 4.64% 1,292,546 199,857 588,707 1999 739,169 5.02% 1,363,967 213,482 624,798 2000 769,157 4.06% 1,439,334 226,972 670,177 2001 784,188 195% 1,518,866 236,941 734,678 2002 813,481 3,74% 1,602,792 233,157 789,311 2003 839,512 3.20% 1,691,356 248,564 851,844 2004 872,855 3.97% 1,784,813 259,126 911,958 2005 896,366 2.69% 1,883,435 269,784 987,069 2006 922,494 2,91% 1,987,506 274,157 1,065,012 Peak growth 5.53% 32,778,775 5,417,932 12,693,899	1990	554,479	3.86%	840,589	156,194	286,110	recessi
1993         571,295         3.53%         987,773         151,235         416,478           1994         595,968         4.32%         1,042,353         158,587         446,385           1995         622,082         4.38%         1,099,949         172,468         477,867           1996         647,656         4.11%         1,160,728         184,111         513,072           1997         672,612         3.85%         1,224,865         196,067         552,253           1998         703,839         4.64%         1,292,546         199,857         588,707           1999         739,169         5.02%         1,363,967         213,482         624,798           2000         769,157         4.06%         1,439,334         226,972         670,177           2001         784,188         1.95%         1,518,866         236,941         734,678           2002         813,481         3.74%         1,602,792         233,157         789,311           2003         839,512         3.20%         1,691,356         248,564         851,844           2004         872,855         3.97%         1,784,813         259,126         911,958           2005         896,366 <td>1991</td> <td>551,620</td> <td>-0.52%</td> <td>887,036</td> <td>156,579</td> <td>335,416</td> <td></td>	1991	551,620	-0.52%	887,036	156,579	335,416	
1994         595,968         4.32%         1,042,353         158,587         446,385           1995         622,082         4.38%         1,099,949         172,468         477,867           1996         647,656         4.11%         1,160,728         184,111         513,072           1997         672,612         3.85%         1,224,865         196,067         552,253           1998         703,839         4.64%         1,292,546         199,857         588,707           1999         739,169         5.02%         1,363,967         213,482         624,798           2000         769,157         4.06%         1,439,334         226,972         670,177           2001         784,188         1.95%         1,518,866         236,941         734,678           2002         813,481         3.74%         1,602,792         233,157         789,311           2003         839,512         3.20%         1,691,356         248,564         851,844           2004         872,855         3.97%         1,784,813         259,126         911,958           2005         896,366         2.69%         1,883,435         269,784         987,069           2006         922,494 </td <td>1992</td> <td>551,814</td> <td>0.04%</td> <td>936,050</td> <td>149,281</td> <td>384,236</td> <td></td>	1992	551,814	0.04%	936,050	149,281	384,236	
1995         622,082         4.38%         1,099,949         172,468         477,867           1996         647,656         4.11%         1,160,728         184,111         513,072           1997         672,612         3.85%         1,224,865         196,067         552,253           1998         703,839         4.64%         1,292,546         199,857         588,707           1999         739,169         5.02%         1,363,967         213,482         624,798           2000         769,157         4.06%         1,439,334         226,972         670,177           2001         784,188         1.95%         1,518,866         236,941         734,678           2002         813,481         3.74%         1,602,792         233,157         789,311           2003         839,512         3.20%         1,691,356         248,564         851,844           2004         872,855         3.97%         1,784,813         259,126         911,958           2005         896,366         2.69%         1,883,435         269,784         987,069           2006         922,494         2.91%         1,987,506         274,157         1,065,012           Peak growth	1993	571,295	3.53%	987,773	151,235	416,478	
1996         647,656         4.11%         1,160,728         184,111         513,072           1997         672,612         3.85%         1,224,865         196,067         552,253           1998         703,839         4.64%         1,292,546         199,857         588,707           1999         739,169         5.02%         1,363,967         213,482         624,798           2000         769,157         4.06%         1,439,334         226,972         670,177           2001         784,188         1.95%         1,518,866         236,941         734,678           2002         813,481         3.74%         1,602,792         233,157         789,311           2003         839,512         3.20%         1,691,356         248,564         851,844           2004         872,855         3.97%         1,784,813         259,126         911,958           2005         896,366         2.69%         1,883,435         269,784         987,069           2006         922,494         2.91%         1,987,506         274,157         1,065,012           Peak growth         5.53%         32,178,775         5,417,932         12,693,899	1994	595,968	4.32%	1,042,353	158,587	446,385	
1997         672,612         3.85%         1,224,865         196,067         552,253           1998         703,839         4.64%         1,292,546         199,857         588,707           1999         739,169         5.02%         1,363,967         213,482         624,798           2000         769,157         4.06%         1,439,334         226,972         670,177           2001         784,188         1,95%         1,518,866         236,941         734,678           2002         813,481         3.74%         1,602,792         233,157         789,311           2003         839,512         3.20%         1,691,356         248,564         851,844           2004         872,855         3.97%         1,784,813         259,126         911,958           2005         896,366         2.69%         1,883,435         269,784         987,069           2006         922,494         2.91%         1,987,506         274,157         1,065,012           Peak growth         5.53%         32,178,775         5,417,932         12,693,899	1995	622,082	4.38%	1,099,949	172,468	477,867	
1998         703,839         4.64%         1,292,546         199,857         588,707           1999         739,169         5.02%         1,363,967         213,482         624,798           2000         769,157         4.06%         1,439,334         226,972         670,177           2001         784,188         1.95%         1,518,866         236,941         734,678           2002         813,481         3.74%         1,602,792         233,157         789,311           2003         839,512         3.20%         1,691,356         248,564         851,844           2004         872,855         3.97%         1,784,813         259,126         911,958           2005         896,366         2.69%         1,883,435         269,784         987,069           2006         922,494         2.91%         1,987,506         274,157         1,065,012           Peak growth         5.53%         32,178,775         5,417,932         12,693,899	1996	647,656	4.11%	1,160,728	184,111	513,072	
1999 739,169 5.02% 1,363,967 213,482 624,798 2000 769,157 4.06% 1,439,334 226,972 670,177 2001 784,188 1.95% 1,518,866 236,941 734,678 2002 813,481 3.74% 1,602,792 233,157 789,311 2003 839,512 3.20% 1,691,356 248,564 851,844 2004 872,855 3.97% 1,784,813 259,126 911,958 2005 896,366 2.69% 1,883,435 269,784 987,069 2006 922,494 2.91% 1,987,506 274,157 1,065,012 Peak growth 5.53% 32,178,775 5,417,932 12,693,899	1997	672,612	3.85%	1,224,865	196,067	552,253	
2000         769,157         4.06%         1,439,334         226,972         670,177           2001         784,188         1.95%         1,518,866         236,941         734,678           2002         813,481         3.74%         1,602,792         233,157         789,311           2003         839,512         3.20%         1,691,356         248,564         851,844           2004         872,855         3.97%         1,784,813         259,126         911,958           2005         896,366         2.69%         1,883,435         269,784         987,069           2006         922,494         2.91%         1,987,506         274,157         1,065,012           Peak growth         5.53%         32,178,775         5,417,932         12,693,899	1998	703,839	4.64%	1,292,546	199,857	588,707	
2001     784,188     1.95%     1,518,866     236,941     734,678       2002     813,481     3.74%     1,602,792     233,157     789,311       2003     839,512     3.20%     1,691,356     248,564     851,844       2004     872,855     3.97%     1,784,813     259,126     911,958       2005     896,366     2.69%     1,883,435     269,784     987,069       2006     922,494     2.91%     1,987,506     274,157     1,065,012       Peak growth     5.53%     32,178,775     5,417,932     12,693,899	1999	739,169	5.02%	1,363,967	213,482	624,798	
2002     813,481     3.74%     1,602,792     233,157     789,311       2003     839,512     3.20%     1,691,356     248,564     851,844       2004     872,855     3.97%     1,784,813     259,126     911,958       2005     896,366     2.69%     1,883,435     269,784     987,069       2006     922,494     2.91%     1,987,506     274,157     1,065,012       Peak growth     5.53%     32,178,775     5,417,932     12,693,899	2000	769,157	4.06%	1,439,334	226,972	670,177	
2003     839,512     3.20%     1,691,356     248,564     851,844       2004     872,855     3.97%     1,784,813     259,126     911,958       2005     896,366     2.69%     1,883,435     269,784     987,069       2006     922,494     2.91%     1,987,506     274,157     1,065,012       Peak growth     5.53%     32,178,775     5,417,932     12,693,899	2001	784,188	1.95%		236,941	734,678	
2004     872,855     3.97%     1,784,813     259,126     911,958       2005     896,366     2.69%     1,883,435     269,784     987,069       2006     922,494     2.91%     1,987,506     274,157     1,065,012       Peak growth     5.53%     32,178,775     5,417,932     12,693,899	2002	813,481	3.74%	1,602,792	233,157	789,311	
2005     896,366     2.69%     1,883,435     269,784     987,069       2006     922,494     2.91%     1,987,506     274,157     1,065,012       Peak growth     5.53%     32,178,775     5,417,932     12,693,899			3.20%	1,691,356	248,564	851,844	
2006         922,494         2.91%         1,987,506         274,157         1,065,012           Peak growth         5.53%         32,178,775         5,417,932         12,693,899			3.97%	The state of the state of the state of	259,126	911,958	
Peak growth 5.53% 32,178,775 5,417,932 12,693,899		896,366	2.69%	1,883,435	269,784	987,069	
	Peak	0			-	12,693,899	
i.e. \$2.34 excess burden for every tax dollar	i.e.	\$2.34	excess burde	en for every tax do	ollar		

#### **Postscript**

That my overarching approach to excess burden is conservative rather than excessive is supported by Harvard's Martin Feldstein who found multiples in excess of 2.0 that related only to the deleterious effects of *incomes* taxes in his mathematical modelling. Feldstein corrected miserable findings of a fraction of 1.0 by Arnold Harberger, Chicago's (and Pinochet's) tax expert.

So, if every dollar of tax levied on labour and capital over the period 1972 to 2006 cost at least \$2.34 in recessional and unemployment deadweight, in inadequate health and educational deadweight, in underinvestment in infrastructure and social services deadweight, would it be out of place for Australians to consider re-introducing the federal land 'tax'

we had from 1910 to 1952 as recommended by the Henry Tax Review? As nations begin to elect troglodytes as saviours, perhaps we should consider whether \$0 damage v. \$2.34 devastation for every dollar of tax raised is worthy of some thought in economic and political circles.

People from philosopher John Locke to economist Mason Gaffney have shown all revenues ultimately derive from society's surplus (economic rent) anyway. Why don't we get it from that source in the first instance? We ought to be discovering by now that only the 0.1% is advantaged by self-defeating taxes which apply an excess burden of \$2.34 onto we plebeians? Eh, Thomas Piketty? Eh, Yanis Varoufakis?

Most economists manage to ignore the *real* excess burden of taxation and escalating land prices. This has seen wage levels decline or stagnate across the world as the 0.1% (including banks, CEOs and other aspirants) mercilessly rip public rent out of the economy. The only political alternative to addressing all the deadweight seems to be to seek to drive wages down even further. Although this is literally counterproductive, it continues daily to win adherents and send world economies further down the gurgler.

Bryan Kavanagh was employed in the Australian Taxation Office and the Commonwealth Bank of Australia as a real estate valuer before cofounding a private real estate valuation practice in Melbourne in 1997. His blogs may be read at http://thedepression.org.au/

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