

# Virtual Worlds

## Modelling Entitlement to Legal Aid Using The FRS

# The Legal Aid System

- 3 Main Types:
  - Civil Legal Aid
  - Criminal Legal Aid – partly at discretion of trial judge
  - Advice and Assistance aka “Green Form” - for short consultations
- We're mainly concerned with Civil Legal Aid
- Systems different in Scotland (<http://www.slab.org.uk>), England & Wales (<http://www.legalservices.gov.uk/>), Northern Ireland (<http://www.nilsc.org.uk/>)
- England and Wales system reformed significantly during 2002-2004
- Costs:
  - England and Wales: **£2bn**, of which ~55% criminal, ~25% civil and 15% Advice and Assistance
  - Scotland: **£155Mn**
  - Northern Ireland: **£65Mn**

# Civil Legal Aid Means Tests

- Broadly similar structure in all 3 jurisdictions
- Merits tests (is claim likely to succeed?) as well as means test
- Means Tests have income and capital components
- Recipients of Income Support and its equivalents are 'passport' (qualified automatically with no further means test).
- Income:
  - Some measure of typical or expected income
  - minus allowances for partner, children
  - minus allowances for housing costs, work expenses, various other expenses
  - Gives **disposable income**
  - Disposable compared to upper and lower income limits
  - Disposable < lower Limit? All Legal Expenses Paid
  - Disposable < upper limit? Expenses paid, but claimant makes contribution of proportion of excess over lower limit
  - Disposable > upper limit? Disqualified
- Limits and Allowances loosely aligned with Income Support levels

# Problems With The Means Tests

- Complex, difficult to administer;
- High allowances for (e.g.) housing can produce appearance of unfairness: e.g. the Maxwell brothers;
- Incentive problems with lawyers: possibly no incentive to cut costs for a client on legal aid.

# English Reforms

- Replace allowances for work expenses, etc. with fixed amounts;
- Introduce further gross income cap – disqualified if income is above this, no matter what other allowances you have;
- Modelled using an earlier version of model described here

# Modelling Legal Aid

- Virtual World's clients: Scottish Legal Aid Board (2007 - ); Northern Irish Legal Legal Services Commission (2006/7)
- Eligibility (the means test) can be modelled using FRS;
- To estimate costs you need to know how many of those eligible would claim: FRS doesn't contain suitable information for this (legal need or usage). So supplementary data needed.

# Modelling Eligibility - Problems

- Main problem: nothing to verify results against:
  - No recorded individual receipts as with (e.g.) income tax, income support;
  - Likewise no aggregate figures possible for eligibility (as opposed to claims and costs)
- Modelling capital is always difficult, of course
- Constructing forward-looking income measure is awkward

# Modelling Costs: Scottish Case

- Disaggregated cost and payment data for all Civil Legal Aid Cases from 2005/6 was made available to us;
- Matched against baseline estimated entitlement figures by age group and gender;
- Allows us to model effects of changing contribution rates on costs and claims: the higher a family's contributions, the more cases there are where contributions would exceed the likely costs, making claiming legal aid uneconomic.

# The Model

- Conventional Tax-Benefit model structure
- Uses recorded benefit receipts and tax payments, so not (yet) a full tax benefit model;
- Separate versions for Ireland and Scotland
- Written in Ada: high – level language similar to Pascal, developed for US Government (<http://www.adacore.com>);
- Developed using a “test first” methodology: write unit tests describing everything the model should do, write enough code to pass the tests, then stop;
- Has a web based front-end: allows all researchers (and also clients) to share access to the same version of the model, protected;
- Model Size:
  - Approx 1,500 lines of specific legal aid code;
  - Approx 10,000 general-purpose lines (I/O handling, tabulators, general calculators, etc.);
- Interface to FRS data: automatically generated using scripts to parse the FRS documentation. (Scripts written in Ruby <http://www.ruby-lang.org/en/>)
- Code is downloadable: [http://virtual-worlds.biz/downloads/tb\\_components.tgz](http://virtual-worlds.biz/downloads/tb_components.tgz) (GPL Licence)

# Irish Model: Home Page

Northern Ireland Legal Aid: Intro Page - Konqueror

Location Edit View Bookmarks Tools Settings Help

http://virtual-worlds.org.uk/ni\_legal/intro\_page.shtml

DARTS : HOMEPAGE Northern Ireland Legal Aid:...

## NI LEGAL AID MODEL; HOME

Home < [Change Parameters](#) > [View Results](#)

### Base Selection

Name for this session ? (alphanumeric characters, spaces and underscores only, please)

Uprate Data?

Base System Type :

Optimisation Type :

Data Year : 2003/4 (fixed for now, sorry).

Weight on Disruption (off diagonal elements) (0-1)

Weight on Costs( deviation of totals from base) (0-1)

*Remainder is loaded on targeting error*

Treat Benefit unit members as adversaries

### Restore Previous Sessions

Session Name	Last Modified		
ggg	2006- 5- 23	<input type="button" value="restore"/>	<input type="button" value="delete"/>

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# Scottish Model: Changing Allowances

Income and Capital Limits - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.virtual-worlds.org.uk/slab/actions/?page=income\_limits

SCOTTISH LEGAL AID MODEL

Home » Change Parameters « View Results

» Income and Capital Limits « • Capital Disregards • Incomes and Passporting • Allowable Expenses • Housing Costs • Contributions

### Income and Capital Limits

Lower Income Limit	2995.00	Upper Income Limit	9781.00
Lower Capital Limit	1640.00	Upper Capital Limit	12070.00
Gross Income Lower Limit (fully entitled below this)	999999999999	Gross Income Limit (disqualified above this)	999999999999

Use Equivalised gross income?

### Allowances

	Age Limit	Amount
First Child Age Limit	16	2377.00
2nd Child Age Limit	19	2377.00
Top Child Age Limit	999	2377.00
Living Allowance (Criminal Cases)		0.00
Partner's Allowance		1702.00
Other Dependent's allowance		2377.00

Housing Equity Counts as Capital?

Housing Equity Disregard 0.00

save run english reset uprate uprate amount (%) 0.00

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# Irish Model: Swapping Allowances for flat-rate alternatives

Allowable Expenses - Konqueror

Location Edit View Bookmarks Tools Settings Help

http://virtual-worlds.org.uk/ni\_legal/actions/?page=allowable\_expenses

DARTS : HOMEPAGE Allowable Expenses

## NI LEGAL AID MODEL; MK I

Home > Change Parameters < View Results

Income and Capital Limits > Capital Disregards > Incomes and Passporting > Allowable Expenses < Housing Costs

### Allowable Expenses

Set the radio button to 'percentage' if you want to allow a proportion (1=all 0=none) of that item. Set to flat-rate if you want to set a maximum amount instead, and enter the maximum (p.a.) in the box on the right.

Flat Rate or Proportional?	Proportion or absolute amount allowable
Travel Expenses <input checked="" type="checkbox"/>	1300.00
Pension <input type="checkbox"/>	1.00
avcs <input type="checkbox"/>	1.00
Union Fees <input type="checkbox"/>	1.00
Child Care <input type="checkbox"/>	1.00
Friendly Socs <input type="checkbox"/>	1.00
Sports <input type="checkbox"/>	0.00
Loan Repayments <input type="checkbox"/>	0.00
Medical Insurance <input type="checkbox"/>	0.00
Charities <input type="checkbox"/>	0.00
Maintenance Payments <input type="checkbox"/>	1.00
Shared Rent <input type="checkbox"/>	0.00
Student Expenses (e.g. books) <input checked="" type="checkbox"/>	795.00
Loan Repayments <input type="checkbox"/>	0.00
Fines And other Transfers <input type="checkbox"/>	1.00

save run optimise reset english uprate uprate amount (%) 0.00

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# Scottish Model: Example Output

Output - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.virtual-worlds.org.uk/slab/output/?action=display&compare=totals

SCOTTISH LEGAL AID MODEL

Home • Change Parameters » View Results ◀

Output

Download the run's profile.

Download the run's parameters in comma- delimited ascii.

Cell to compare with: levels Cell Operation?: Counter Cell Contents: Potential Offers redraw

		After				
		Passported	Full Entitled	Partially Entitled	Not Entitled	totals
Before	Passported	237,145.00	0.00	0.00	0.00	237,145.00
	Fully Entitled	0.00	296,975.00	0.00	0.00	296,975.00
	Partially Entitled	0.00	32,208.00	806,308.00	0.00	838,516.00
	Not Entitled	0.00	0.00	117,364.50	1,246,418.00	1,363,782.50
	<b>Totals</b>	<b>237,145.00</b>	<b>329,183.00</b>	<b>923,672.50</b>	<b>1,246,418.00</b>	<b>2,736,418.50</b>

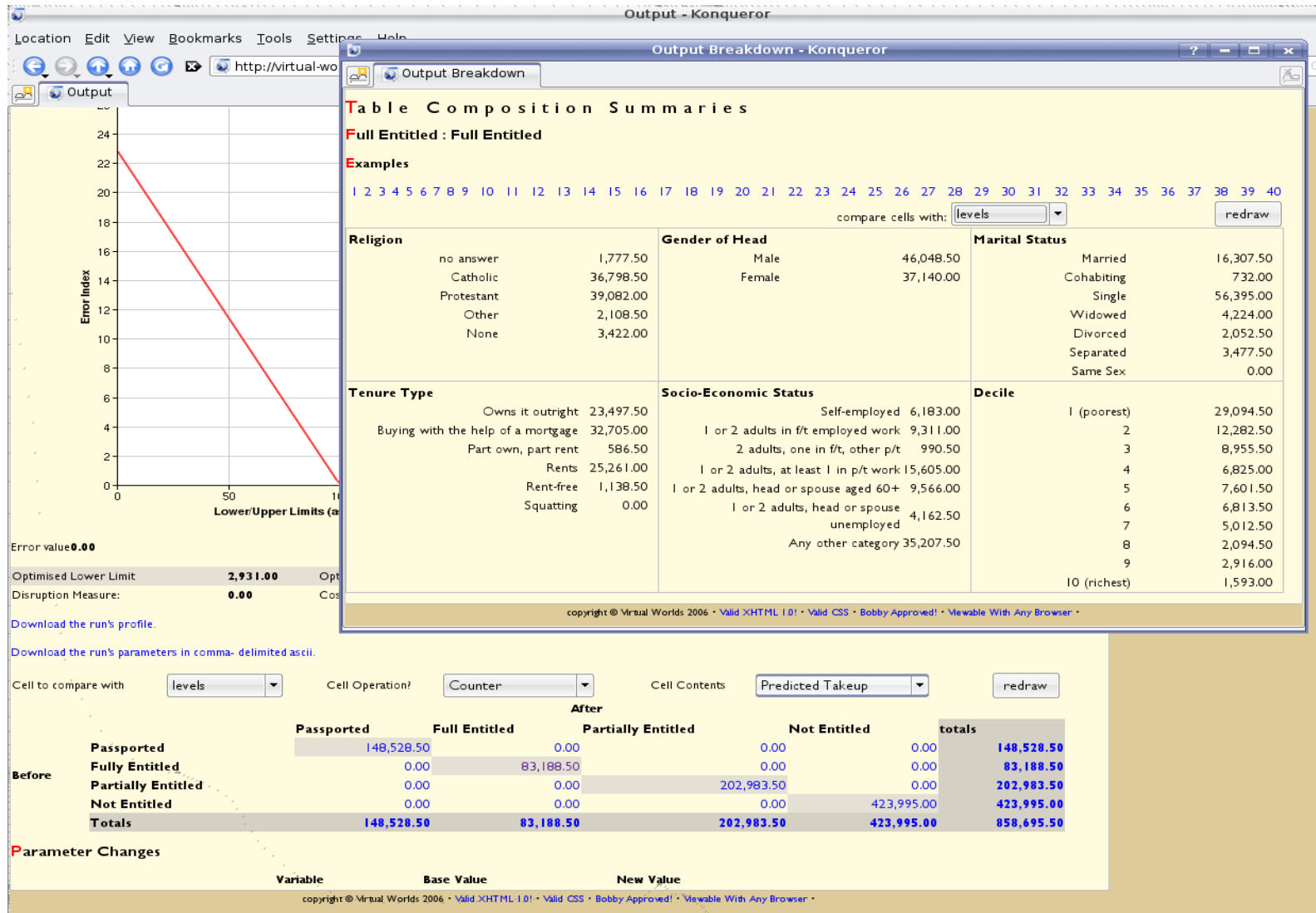
Parameter Changes

Variable	Base Value	New Value
Capital: Lower Limit; normal claim :	6,640.00	1,640.00
Capital: Upper Limit; normal claim	11,070.00	12,070.00
Guaranteed Pension Credit :	0.00	1.00

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This shows eligibility both before and after some reform, as across-tabulation of counts of benefit units. Pre- reform is in the rows and post- in the columns

# Irish Model: Drill-Down Output



All the cells in the the output tables are selectable by the investigator. This brings up a window showing the composition of the cell (proportion of owner-occupiers, for example).

# Scottish Model: Example Household

Output - Mozilla Firefox

http://www.virtual-worlds.org.uk/slab/output/?action=display&compare

SCOTTISH LEGAL

Home • Change Parameters » View Results ◀

Download the run's profile.

Download the run's parameters in comma-delimited ascii.

Cell to compare with:  Cell Operation?:

	Passported	Full Entitled
Before		
Passported	237,145.00	0.00
Fully Entitled	0.00	296,975.00
Partially Entitled	0.00	32,208.00
Not Entitled	0.00	0.00
Totals	237,145.00	329,183.00

Parameter Changes

Variable

Capital: Lower Limit; normal claim :

Capital: Upper Limit; normal claim

Guaranteed Pension Credit:

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Partially Entitled :

Examples

1 2 3 4 5 6 7 8 9 10 11

Marital Status of Head (MARITAL)

Null or Missing 0.00

Married 4.07

Cohabiting -0.52

Single -14.82

Widowed 8.98

Separated 4.24

Divorced -1.50

-0.46

Output Breakdown - Mozilla Firefox

http://www.virtual-worlds.org.uk - Output Breakdown - Mozilla Firefox

Interview Date: year	2003
Month	5
Grossing Factor	656.00
Tenure Type	Rents
mortgages	0.00
Rates	1,021.57
Water Rates	0.00
Ground Rent	0.00
Service Charges	0.00
Repairs And Insurance	0.00
Rent	1,206.45
Rent Rebates	1,170.00
Council Tax Rebates	1021.57
Home Equity	0.00
House Price	0.00
Mortgages Outstanding	0.00
Standard Region	Scotland
Region (Old Version)	Scotland
Region Stratifier	Fife, Central, Lothian
Household Composition	Two adults, three or more children
Income Band	£200 and less than £300
Benefit Unit Number I	
Decile	5
Economic Status	1 or 2 adults, hd or sp sick, < pen age
Benefit Unit Type	Lone parent
Last Adult	HEAD
Number of Children	3
Head	
Age	34

Done

category

Done

The investigator can go further and display individual households that have been affected in some way.

# Some Applications: simplification

- (Ireland/England & Wales): if you replace allowances for housing, work, etc. expenses with flat rate amounts, to what would you have to change the main allowances to maintain the same level of eligibility?
- Solution: the model can find this automatically using an optimisation routine which uses a summary value from a model run as the minimand

# Some Applications: reforming contributions in Scotland

- Increases in the contribution rate for those partially entitled reduce the net cost of the scheme. For a given budget, therefore, an increase in contributions allows the upper limit to be extended, so more families are eligible. But, as contribution rates rise, contributions will be more than the cost of many cases, making legal aid uneconomic for them. So, for a given net cost, what contribution structure puts the most cases in scope?
- We used a brute force search. We ran the model 70,000 times on a 'server farm', each with a different contribution rate and income limit. To find the optimal combination we searched through all those which had the desired net cost, and from those Iso-Cost sets, selected the one with the largest number of viable cases.