An API For Microsimulation Models

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***Abstract*—This note describes a simple general Application Programming Interface (API) for controlling microsimulation models.**

***Index Terms*—Microsimulation, APIs**

I. Introduction

This note describes

II. Purpose

There have been online, publicly available versions of large Microsimulation models since the mid-1990s; the Institute for Fiscal Studies' Be Your Own Chancellor (1995) and Virtual Economy (1999) were early examples. Contemporary examples include the ADRS suite of South African simulations, TriplePC and the University of Essex's UK Mod.

All these models are implemented very differently. ...

Our experience of building such models suggests to us that there would be advantages in having a standardised method of interacting..

Based on our experience since then ...

Object - run a model from something like Wordpress - without needing to have the model to hand.

III. Characteristics of Microsimulation Models

Long running
Very different implementations
Phases (queues, running)
Different inputs and outputs
Parameters vs Settings

IV. Features

RESTful (sort of). Reference O'Reilly.
Out of scope: security because ...
Learn about exact formats of inputs/outputs
Hacky session management: CORS shit append session_id on each response
Low marginal cost of adding a model (view) to a server
Typically front-ended by Apache/NGNX
Formats: JSON - optionally Markdown/XML/CSV
Describe parameters:
Validate at server end, even if also at client-side.
Swagger.

V. The API

Different for e.g. Julia Scotben, Python Landman so Julia one is:
https://microapi.virtual-worlds.scot
Typical items:

/model/params/set

/model/settings/set

/model/output/fetch/item
Swagger Docs.

A.

B. Problems

buggy!

TABLE I: Others

Benefit	Code Module	*Notes*
Minimum Wages	HouseholdAdjuster.jl	

References