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***The Limits to Devolution:
Some Results from the ESRC's Research Programme on Devolution
and Constitutional Change***

The Economic Consequences of the Barnett Formula for the Scottish Economy*

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Introduction

- Our project in the ESRC's Devolution and Constitutional Change Programme is entitled: *An Analysis of National and Devolved Economic Policies*.
- In this project we seek to:
 - assess the scope of the devolved authorities to exploit new opportunities for economic management
 - address interregional interaction through trade, migration and price effects (using a specially developed multiregional economic model of the UK)
 - investigate the extent and causes of differential regional and sectoral impacts of changes in UK-wide policy instruments
 - assess the likely consequences of a wide range of different fiscal arrangements for Scotland, Wales, Northern Ireland and England, as well as for the UK as a whole
 - explore the likely interactions between UK-wide and devolved policies, assess their implications for regional and national prosperity, and investigate optimal policy design
- Currently 7 months into the 24-month project
 - so still constructing interregional model, but
 - have begun to explore policy issues with new standalone model of the Scottish economy
 - illustrate how we use this in attempt to enhance our understanding of Barnett formula

The Barnett Formula: Background

- The Barnett formula, in principle at least, governs the assigned budget of the Scottish Parliament (formally block grant, now DEL) and funding of Welsh and NI Assemblies.
- David Heald (conveniently!) provided an analysis at the last Hume Institute Seminar
 - consequences for (DEL) expenditure and expenditure *per capita* across regions of UK (explored also by many others e.g. Ashcroft, Bell, Cuthbert and Cuthbert, Kay, McCrone, Midwinter)
 - higher level of expenditure in Scotland is protected (fixed in nominal terms) by formula but expenditure *per capita* ultimately falls towards the English level (the “squeeze”)
- Try to push the analysis of Barnett a little further, though here only for Scotland:
 - we focus primarily on the consequences of rigorous adherence to the formula for the Scottish economy
 - proceed by making “small open economy” assumption - abstracts from spillover and feedback effects
 - isolate the impact of Barnett (impose *ceteris paribus* assumption in the model)

The Barnett Formula: Limitations of Existing Analyses

- No explicit analysis to date of the likely wider economic consequences of the Barnett formula (e.g. in terms of GDP or employment), but presumably important:
 - Perhaps surprising in view of the fact that the formula drives the regional distribution of an important element of aggregate demand, namely (a component of the region's) government expenditure
- Furthermore, no analysis of the implications of the “Darling amendment”, which resulted in the regular up-dating of the population weights used in the formula
 - Past studies have tended to treat population as a “given” / “exogenous”
 - In fact in a regional economy like Scotland expect population to depend on demand and hence on Barnett
 - Here e.g. a contraction in expenditure in Scotland reduces wages and increases employment rates and a loss in population
 - Hence when weights are up-dated Scotland's lower population relative to England would necessitate a further contraction in expenditures in Scotland
- Try here to tackle both issues, with the help of the standalone Scottish model

Barnett Equilibria

- Useful to begin analysis by distinguishing between:
 - the long-run equilibrium to which *rigorous adherence* to the Barnett formula ultimately drives the system (equal nominal formula-driven expenditures *per capita* across regions)
 - “Barnett equilibrium” (focus on this)
 - the speed of adjustment towards this long-run equilibrium (do not pursue this here)
- Some characteristics of a Barnett equilibrium:
 - of significance if Barnett really does determine assigned budget for the Scottish Parliament (debate in practice, but evidence not yet compelling)
 - no notion of Barnett equilibrium at the outset - regarded as transitory arrangement
 - not inevitable - not an unconditional forecast come what may
 - conditional upon (eventual) strict adherence to the formula (with no permanent formula bypass or compensating adjustments in non-formula-driven expenditures)
 - may not be *desirable* - just an equilibrium to which rigorous application of formula leads
 - Principle of equalisation, notions of fairness and role of “needs assessment” exercises
 - consensus suggests that a current needs assessment would lie between current position and Barnett equilibrium (though considerable uncertainty)
 - in principle could accommodate complex “needs”-based systems, with needs endogenous
 - comparison with alternatives, including variants of “fiscal autonomy”

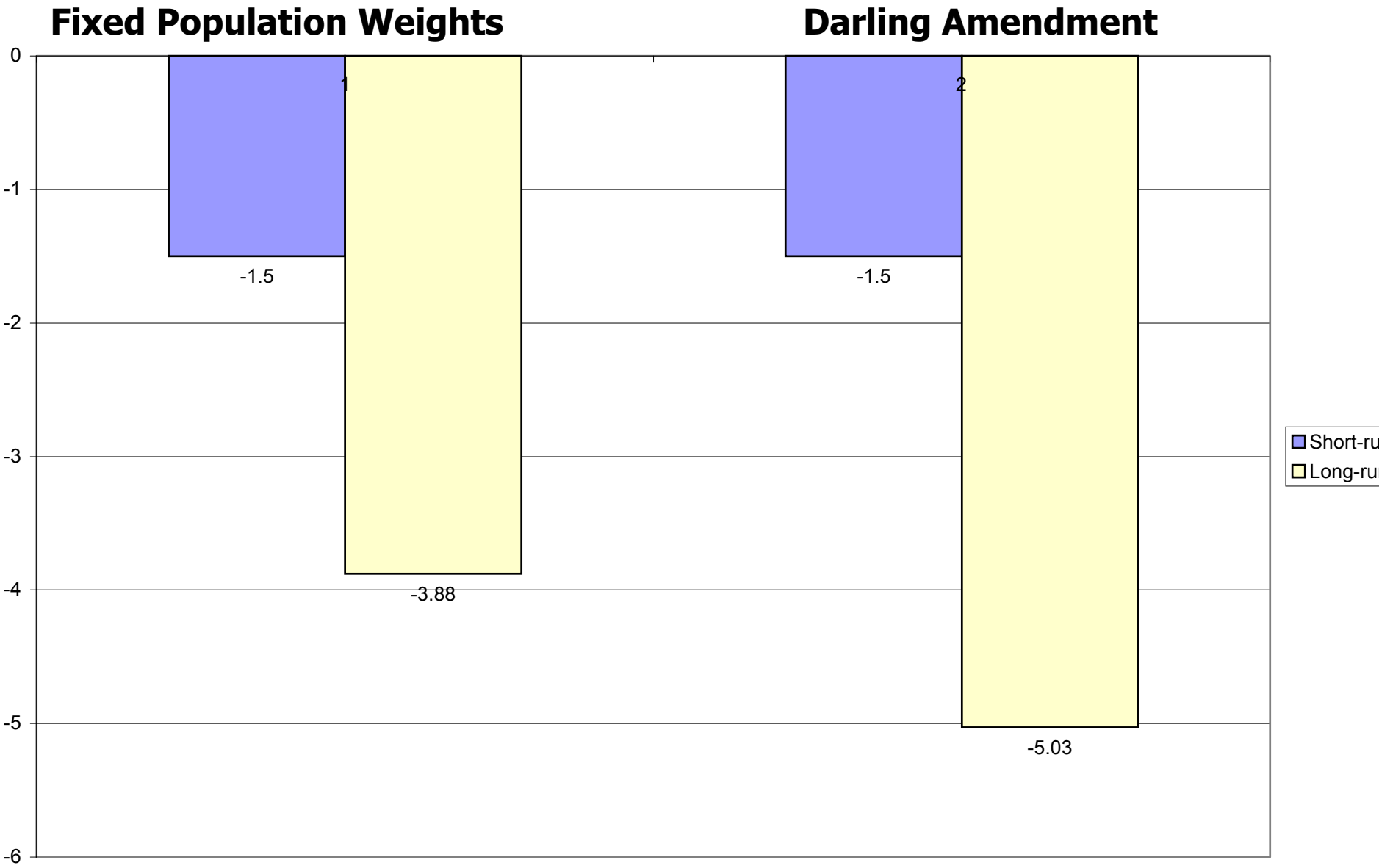
The Barnett Formula's Impact on the Scottish Economy: Likely Direction of Effects

- Impact of shifting to a Barnett equilibrium on the Scottish economy?
 - Levels of nominal government expenditure rise, but less than in England
 - Aggregate demand rises more in England than Scotland (pure demand shock)
 - Implies a kind of “real resource” squeeze, as Scotland (and other peripheral regions) lose labour to England through a market-induced migration process (and capital loss too)
- In Scotland in the *short-run* (fixed populations and capital stocks):
 - Relative reduction in aggregate demand in Scotland
 - Wage and employment rates fall (if element of regional bargaining) and unemployment rates rise
 - Reduction in economic activity in Scotland relative to England
- In *longer-run* - even with *fixed population weights* in Barnett, matters worse:
 - Since wage and unemployment rates fallen relatively outmigration is induced
 - Short run relative demand loss implies loss of profitability, capital decumulation here
- If population weights up-dated worse still: induce further reductions in expenditure

The Barnett Formula's Impact on the Scottish Economy: Simulation Model & Results

- Simulation model is a particular configuration of AMOS, A Macro-Micro Model of Scotland:
 - computable general equilibrium model that is parameterised on Scottish data (key parameters from variety of sources and remainder calibrated to a 1998 Social Accounting Matrix), with Layard, Nickell and Jackman bargaining and migration functions
 - multisectoral, aggregated labour market, captures longer-term adjustment mechanisms
- Proceed by exploring the impact of cutting Scottish formula-driven expenditures to ensure establishment of a Barnett equilibrium:
 - with fixed population weights (so use the *initial* value of Scottish population to compute required change in government expenditure)
 - if there is no change in prices the required contraction in government expenditure in the model is 11.26%
 - with variable population weights (reflecting the Darling amendment)
 - here up-date population weights, and in equilibrium need to ensure that formula-driven expenditures per capita are equalised using *solution* values of Scottish population
 - with no changes in prices and the Layard, Nickell and Jackman flow migration function the required change in expenditure is 14.58%

Percentage Changes in Employment in Scotland Induced by Imposing Barnett Equilibrium



Conclusions & Focus of Future Research

- First attempt at system-wide analysis of Barnett formula:
 - we find adverse impact on Scottish economy relative to that of England - and “updating” of population weights (Darling amendment) makes matters worse
 - though scale of adverse effects is sensitive to migration and wage bargaining behaviour
 - “Needs equilibrium” significantly less adverse impact? - but do not have estimates of *current* needs
- Four main areas for further Barnett-related research within our ESRC project:
 - extend analysis beyond “Barnett equilibria”
 - investigate implications of allowing for possible “supply side” impact effects of formula-driven expenditures
 - develop explicit interregional analysis for UK, and explore the impact of Barnett on *levels* of economic activity in each of England, Scotland, Wales and Northern Ireland
 - explore the impact of alternatives to Barnett – and simulate the effects of alternative fiscal arrangements
- Finally, worth noting:
 - macroeconomic effects of Barnett may be significant, but
 - conventional “needs assessment” exercises would not recognise such effects