How might labour supply respond to the changes in financial work incentives?

David Phillips
(with Stuart Adam, Magali Beffy, Monica Costa Dias and Jonathan Shaw)
Outline and introduction (I)

• An initial look at how labour supply may respond to the changes in financial work incentives from tax and welfare reforms
  – Employment rates and hours of work (individual level)
  – Worklessness (family level)

• Use a number of different models, each with strengths and weaknesses to explore how different parts of the population may respond along different dimensions

• No single quantitative prediction – focus on qualitative patterns

• Not modelling how people may respond to changes in conditionality, transparency, salience or effect of changed take-up...
  – Could be important, but modelling these is very challenging
Outline and introduction (II)

• DWP made some ex-ante predictions of how many extra people may enter work as a result of Universal Credit (but not the other reforms)
  – Uses estimates of responsiveness from the labour supply literature and applies them to calculated changes in work incentives
  – 100,000 to 300,000 more people in work as a result of improved financial incentives
  – More tentative 100,000 to 200,000 as a result of conditionality, etc.

• Our work seeks to explore the potential impact of the changes in financial incentives due to the wider set of reforms
  – See what results seem robust and where there is less certainty
  – Explore different types of responses to the reforms

• Such ‘ex ante’ modelling is important tool for evaluating reforms
  – ‘Ex post’ evaluation of the reforms will be difficult
Modelling labour supply responses

• There is not a single ‘best’ labour supply model
  – Cover different parts of the population
  – Incorporate different types of responses
  – Make different simplifying assumptions

• We use three different approaches
  – A calibration approach
  – A static model for couples and lone parents
  – A dynamic model for women

• These models have been developed over several years at IFS
  – Used in a number of pieces of work
1. The calibration approach

• Similar to the approach used by DWP for their analysis
  – So results are most comparable

• Examine labour supply literature to get estimates of responsiveness and combine with estimated changes in PTRs and EMTRs
  – Look at low, medium and high responsiveness scenarios to explore how sensitive results are

• Can include everyone in this approach, and look at employment, hours and earnings, and include changes to indirect taxes

• But a few drawbacks
  – Ignores income effects
  – Does not model the 16 and 30 hours rules in WTC well
  – Does not allow for joint decision-making in couples
2. The static modelling approach

- Estimate models of participation and hours of work for lone parents and couples in the UK
  - Use data from the FRS 1996-97 to 2010-11

- These models better incorporate income effects, 16-hours rules, etc

- For couples, decisions are joint
  - So can examine changes in the number of 0-earner, 1-earner and 2-earner couples

- But excludes a large part of the population (more than half)
  - Single adults without children
  - Youngest (21 or under) and oldest (60 or over), the disabled, the self employed, and their partners
3. The dynamic modelling approach

- Estimate model of women’s education and labour supply decisions over their lifetimes
  - Uses data from the BHPS 1991 to 2006

- Incorporates dynamic effects
  - People are forward looking, but unsure of future wages etc
  - People save and borrow (subject to constraints)
  - Returns to experience
  - Educational choices
  - Look at ‘short run’ and ‘long run’ impacts of reforms

- But these additional complexities mean simplifications elsewhere
  - Women only
  - Fewer hours options
Using the models together...

- So each model can tell us something different and covers different parts of the population
  - e.g. the calibration approach covers everyone
  - e.g. the static model allows us to model behaviour jointly
  - e.g. the dynamic model allows us to look at longer-run responses

- Together, they can also tell us which results look more robust and where there is more uncertainty about how people may respond

- Models suggest reforms will increase employment among couples and singles without children
  - Although magnitude of these effects is unclear

- But for lone parents, the picture is less clear
Results: couples
Results
For couples... Tax reforms (I)

• Remember, tax reforms strengthen incentives to work, on average, but weaken incentives for those in work to earn more

• Various approaches all suggest modest positive impact of the tax reforms on employment among couples

• Static model suggests:
  – Responses bigger for couples with children and for women
  – e.g. 0.8 percentage points for women in couples with children (baseline employment rate: 77.1%)
  – e.g. 0.3 percentage points for men in couples without children (baseline employment rate: 93.6%)
  – Fewer 0-earner and 1-earner couples, more 2-earner couples
Results
For couples... Tax reforms (II)

• The dynamic model finds broadly similar effects
  – Also increase greater for those with children than without
  – Response may be larger in longer-term as more work experience leads to higher wages (feedbacks to further improvement in work incentive)

• The calibration estimates show
  – Smaller increases, perhaps reflecting the fact this model allows inclusion of VAT increases
  – A small fall in aggregate earnings, reflecting the fact that reforms strengthen work incentives for lower earners but weaken them for higher earners
Results
For couples... Benefit cuts (I)

• Remember, on average strengthen incentive to work, and to increase earnings if already working – but not for all groups

• All models suggest benefit cuts will increase labour supply of people in couples - effects a little larger than for tax reforms

• The static model finds employment effects of
  – About 0.7 to 1.0 percentage points

• It suggests falls in number of 0-earner couples (mostly among those without children); shift from 1-earner couples to 2-earner couples (a bit greater for those with children)
Results
For couples... Benefit cuts (II)

- Both the calibration and dynamic approach find smaller employment effects for those with children than without children
  - Again consistent with work incentive effects

- In addition these models suggest:
  - Increases in hours of work and aggregate earnings, offsetting falls due to tax changes
  - Long-term effects may again be larger than short-term effects
Results
For couples... Universal Credit (I)

• Remember, UC strengthens incentives for couples to have one person in work but weaken incentives for a second partner to work, especially if they have children

• Models suggest a small fall or small increase in employment

• The static model suggests slight falls in employment
  – Driven by those with children

• But this is because of a fall in 2-earner couples: the number of 1-earner couples is predicted to increase, slightly reducing the number of couples where no-one works
Results
For couples... Universal Credit (II)

• The other models find small increases in employment on average among couples
  – But same qualitative pattern: smaller/negative effects for those with children (especially among those with a working partner)

• Models agree that the labour supply effects of UC look to be fairly modest for couples
  – Both the static and dynamic model show the tax changes and benefit cuts to have substantially larger impacts
Results
Summary for couples

- Tax reforms and benefit cuts predicted to increase employment fairly modestly; UC could increase or reduce but likely to be small

- Tax reforms and benefit cuts reduce 0-earner and 1-earner couples, and increase 2-earner couples
  - UC offsets this a little but far from entirely

- The long term impacts of the reforms may be greater as education choices and work experience change
Results: single adults without children
Results
For single adults without children... Taxes

• Included in calibration approach (men and women) and dynamic approach (women only)

• Remember, tax cuts strengthen employment incentives, weaken incentive to earn more if working

• Tax reforms likely to boost employment, but the magnitude of the effect is unclear
  – Calibration approach: 0.1 to 0.3 percentage points
  – Dynamic model (women only): 2.0 percentage points
  – Inclusion of VAT change in the former will explain some of this gap

• Hours of work and aggregate earnings predicted to fall

• Employment effects may be larger in the longer run
Results
For single adults without children... Benefit cuts

• Remember, strengthen both the incentive to work and the incentive to increase earnings if already working

• Predicted to boost employment, hours and earnings of single adults without children, but size of effect uncertain
  – Calibration approach: 0.25 to 1.0 percentage points increase in employment
  – Dynamic model (women only): 1.9 percentage points in short run, a little larger in long run
Results
For single adults without children... Universal Credit

• Remember, UC strengthens incentives for single adults to work, but slightly weakens incentives for them to earn more if already working

• Not entirely clearly if this will boost employment
  – Calibration suggests it will (0.2 to 0.9 percentage points)
  – But dynamic model predicts little effect for single women

• So like for couples, impact of UC less clear than tax reforms or benefit cuts
Results
Summary for single adults without children

• Employment predicted to increase due to the tax changes and the benefit cuts, with impact of UC more uncertain

• Magnitude of effects uncertain – calibration suggests only modest impacts, while dynamic model suggests sizeable impacts (4 percentage points for women, overall)
Results: lone mothers
Results
For lone mothers... Taxes

• Can use all three models to examine what happens for this group.

• Again, each model predicts increases in employment for lone mothers due to the tax reforms
  – Fairly modest, generally

• But things are much more complicated for the benefit reforms
Results
For lone mothers... Benefit cuts

• Remember, benefit cuts reduce RRs (strengthen work incentives) but increase PTRs (weaken work incentives) so difficult to predict what would happen to employment

• Both calibration (which ignores RRs) and dynamic model suggest benefit cuts will reduce employment of lone mothers
  – In dynamic model that fall is large: over 2.0 percentage points

• But static model suggests the benefit cuts will increase employment of lone mothers
  – Again, magnitude is fairly substantial: 1.2 percentage points

• Increase or decrease in employment is feasible given the complex changes in incentives
Results
For lone mothers... Universal Credit (I)

• Even more challenging to model the labour supply effects of UC

• Remember, effects on work incentives of lone parents are mixed
  – Increases the average PTR
  – Increases the numbers facing moderately high PTRs while reducing the numbers facing the very highest PTRs
  – Removal of 16 hour and 30 hour rules very important for this group
  – Big changes in incentives for people to take jobs of under 16 hours a week (large strengthening for renters, weakens for some home owners)

• Impact of UC on lone parents’ labour supply therefore particularly uncertain
  – None of our models are very good for under 16 hours per week
  – Results strikingly different between models
Results
For lone mothers... Universal Credit (II)

• Both calibration and static model suggest UC reduces lone mothers’ employment a little
  – Static model also suggests few take up ‘mini jobs’ of <16 hours a week

• But the dynamic model predicts UC will increase employment of lone mothers by around 5 percentage points
  – Unlikely that dynamic nature of model is responsible for this difference

• So unclear how welfare reforms affect lone mothers’ labour supply
Overall summary: the labour supply impact of the reforms
Summary (I)

• Tax reforms strengthen incentives to be in work, and our models suggest this will increase employment modestly
  – But weakens incentives for higher earners so may reduce aggregate earnings

• Benefit cuts likely to increase employment modestly overall
  – Strengthen incentives to earn more too, increasing aggregate hours and earnings

• Both effects may be larger in the long term as people gain more work experience and adjust their education decisions
Summary (II)

- The impact of Universal Credit is less certain: our different models predict very different impacts for lone mothers.

- Indeed, the impact of the welfare reforms as a whole on lone mothers is highly uncertain:
  - Benefit cuts have ambiguous effect on average incentives to be in work.
  - UC has complicated and difficult-to-model effects on lone mothers’ work incentives.
Summary (III)

• Not possible to predict precise effects of reforms with confidence

• Across population as a whole calibration suggests increase in employment of:
  – 50,000 to 230,000 as a result of Universal Credit
  – 125,000 to 540,000 as a result of tax and welfare reforms together
  – But these figures should not be taken as definitive lower and upper bounds
  – Dynamic model has somewhat larger responses, and shows responses increasing in the long run as education and work experience change

• Remember this is only response to financial work incentives
  – Also may be changes associated with conditionality, simplicity etc
  – Labour demand may limit job availability