

The Impact of the Financial Crisis on UK Company Performance

Rebecca Riley*, Chiara Rosazza Bondibene* and Garry Young**

*National Institute of Economic and Social Research & Centre for Macroeconomics

**Bank of England & Centre for Macroeconomics

9 July 2013

FINCRISIS User Group meeting

ESRC Secondary Data Analysis Initiative

NIESR, London



Disclaimers:

This work contains statistical data which is Crown Copyright; it has been made available by the Office for National Statistics (ONS) through the Secure Data Service (SDS) and has been used by permission. Neither the ONS nor SDS bear any responsibility for the analysis or interpretation of the data reported here. This work uses research datasets which may not exactly reproduce National Statistics aggregates.

Any views expressed cannot be taken to represent those of the Bank of England or to state Bank of England policy.

Preliminary results.

Acknowledgements:

The financial support of the Economic and Social Research Council grant reference ES/K00378X/1 is gratefully acknowledged.

National Institute of Economic and Social Research

User Group

- Forum for dissemination of research findings as well as means for key stakeholders to provide feedback on research as it takes place.
- Next user group meeting in November.

Today's outline:

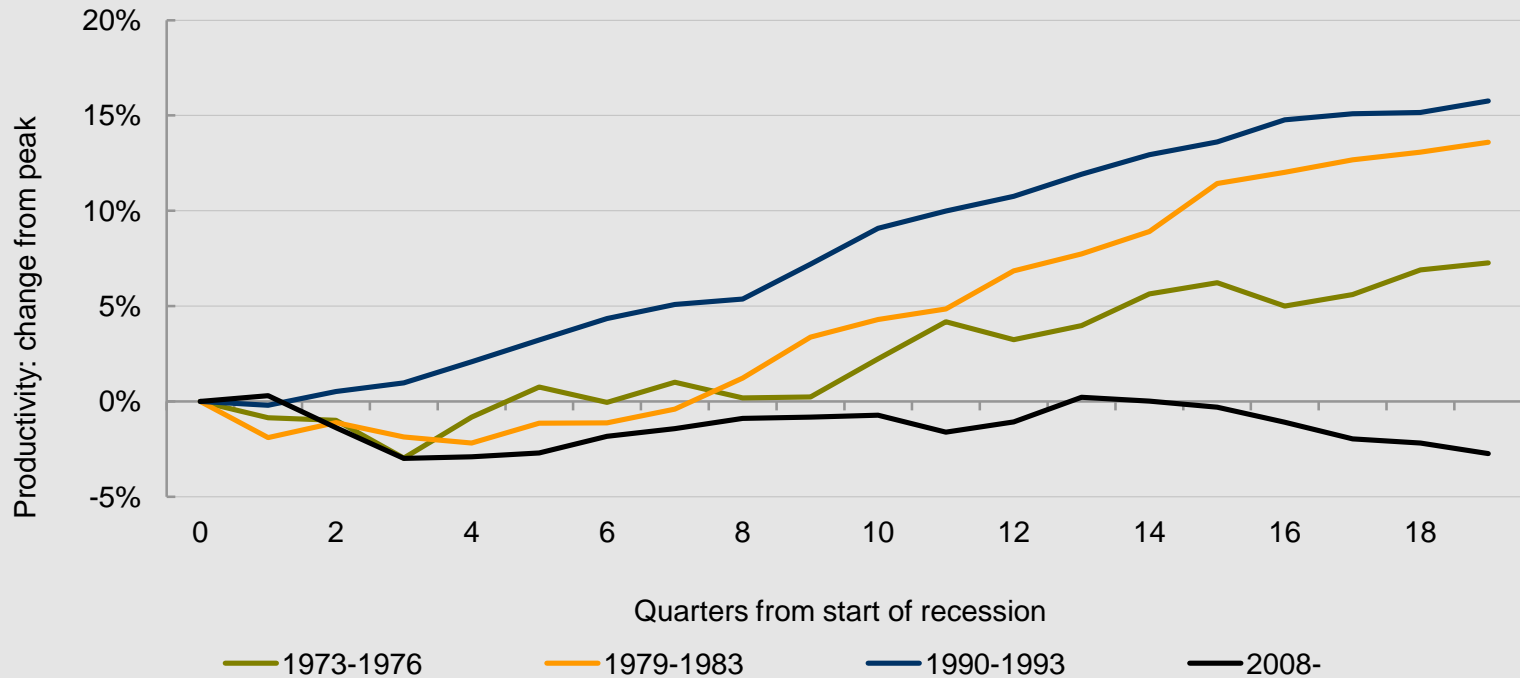
- Recap of project
- Summary of what is known
- Early findings from project
- Next steps



Project Overview



UK productivity fell sharply during the recession of 2008-9, and has since stagnated



The main aim of the proposed research is to investigate the underlying causes of this productivity weakness in the UK, examining in particular the mechanisms by which the banking sector crisis might have affected the supply side of the UK economy, and how it has affected company performance.

Possible impact of banking sector impairment on companies

Higher funding costs for impaired banks, leading to:

a) **credit crunch**: higher shadow cost of credit for given risk for new loans

Direct impact:

- More costly for companies reliant on bank finance to finance working capital and investment
- Productivity of constrained firms reduced relative to counterfactual, including for new entrants

Indirect impact:

- Some increase in market share of unconstrained companies, including delaying exit of unconstrained dying companies.

b) **forbearance**: lower shadow cost of credit for given risk for existing loans

- Capital constrained banks refrain from enforcing contracts so as not to crystallise losses on their own balance sheets
- Weak companies do not exit, also taking market share away from stronger ones.



RQ1: How widespread across sectors and UK companies is the productivity slowdown since the financial crisis? How does this differ to the recession of the early 1990s?

- Decompose aggregate productivity growth into within and between firm effects.
- This tells us the extent to which the stagnation in productivity since the financial crisis is due to:
 - **resource misallocation between existing firms**, as might be expected in a banking crisis;
 - **a drop in entry of productive young firms** or a **lack of creative destruction** or ‘cleansing’ effect of recession, consistent with the idea that the banking crisis has stunted the development of young firms and provided protection, possibly exacerbated by creditor forbearance issues, for more established, yet weak companies;
 - **a widespread productivity shock**, which may or may not be directly associated with the banking crisis.

RQ2: What has been the impact of the banking sector crisis on bank credit conditions experienced by UK companies?

- Document the impact of the banking sector crisis on the balance sheets of the major UK banks and how this has been transmitted to UK companies.
 - Verify the extent to which we have actually observed a crisis in the flow of credit.
- Do we observe variation in credit supply conditions across types of companies/sectors of the economy?
 - Crucial to addressing RQ3, where identification relies on our ability to distinguish between firms that are vulnerable to tight credit conditions and a comparable set of firms that are not.

RQ3: What are the mechanisms through which bank credit conditions might have affected the performance of UK companies and what are the magnitudes of these effects?

- Compare outcomes for firms who are likely to be vulnerable to credit constraints to outcomes for firms who are less likely to be vulnerable to credit constraints before and after the financial crisis.
 - Quasi-experimental approach.
 - Divide firm observations into ‘treatment’ and ‘control’ groups based on the analysis underlying RQ2.
- This provides direct estimates of the impact of credit constraints on TFP and labour productivity
 - Consider investment, job creation and firm survival
 - Key datasets: ARD and FAME

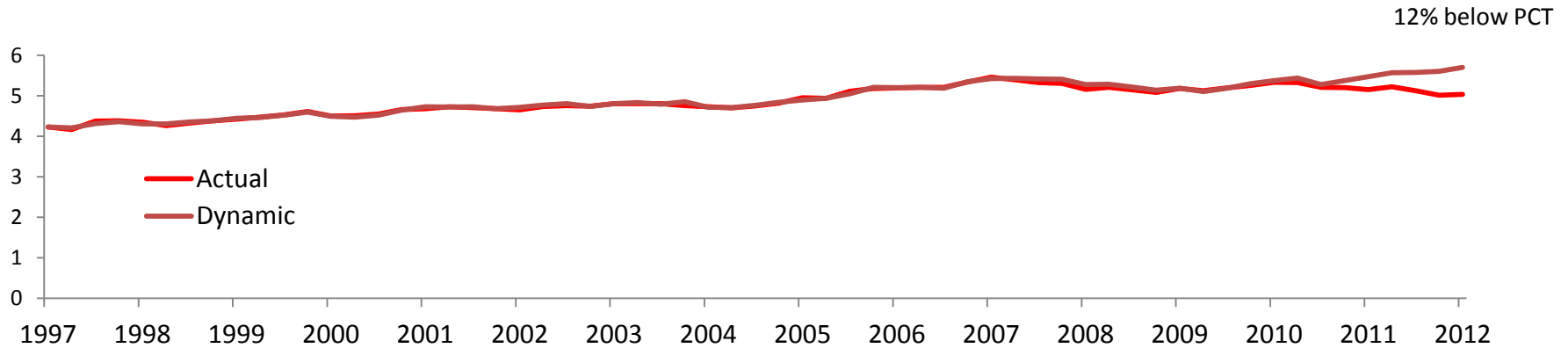
Summary of Existing Evidence



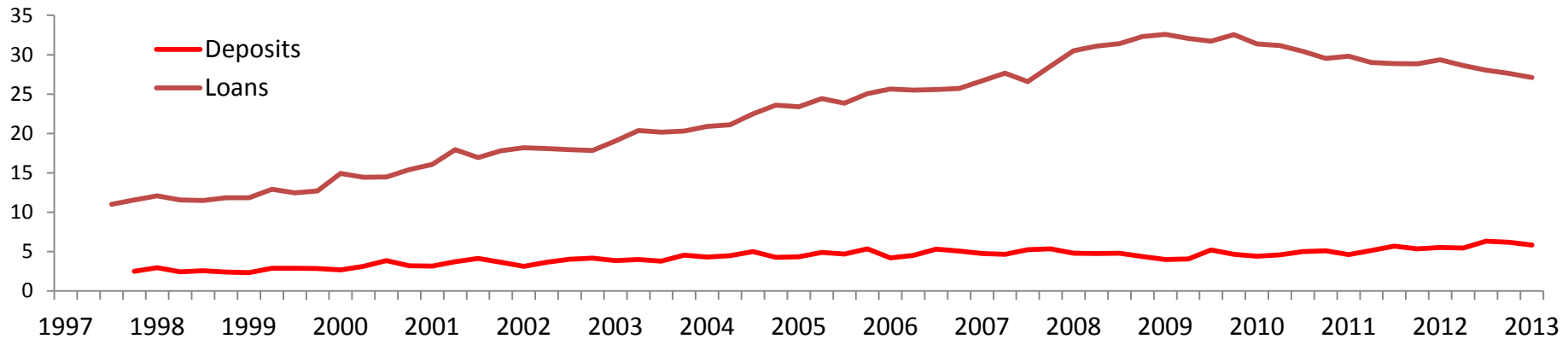
- Output per worker around 15% below pre-crisis trend. Apart from 2008/9, mainly due to **stagnation** of productivity not outright decline.
- Surveys suggest little spare capacity within companies.
- Productivity weakness **not** confined to few industries. But seems less significant in industries with low bank dependency; eg Professional, Scientific and Technical Activities, Administrative and Support Activities, and Arts, Entertainment and Recreation.

Accomodation and Food

Actual & Dynamic Fitted Productivity: Accomodation & Food



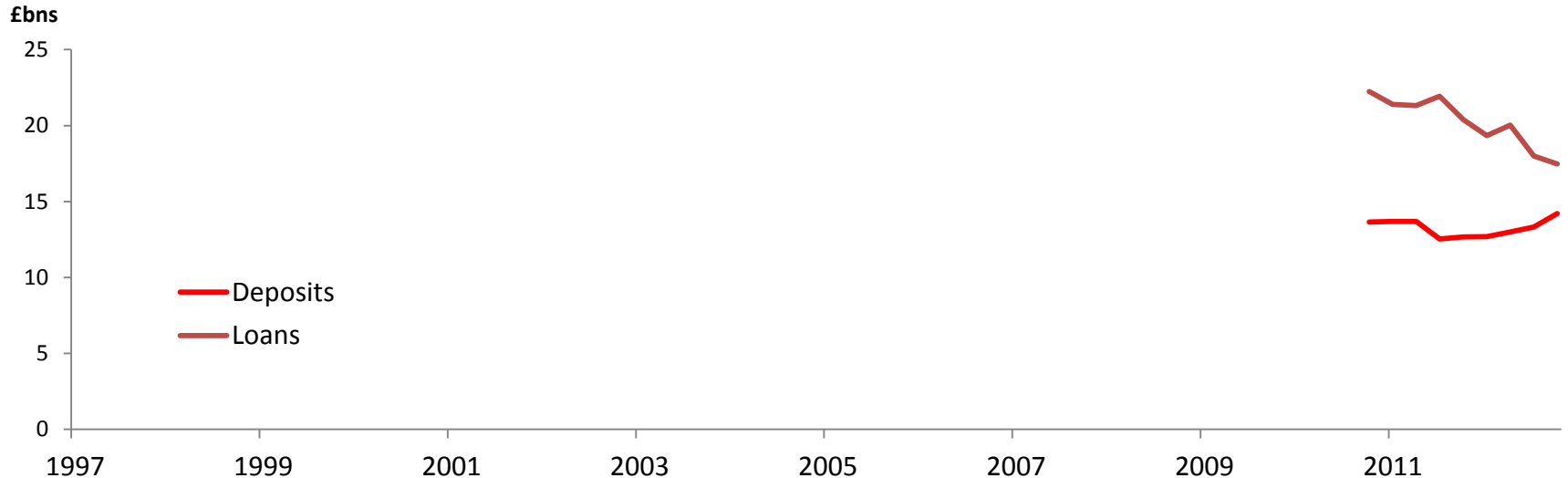
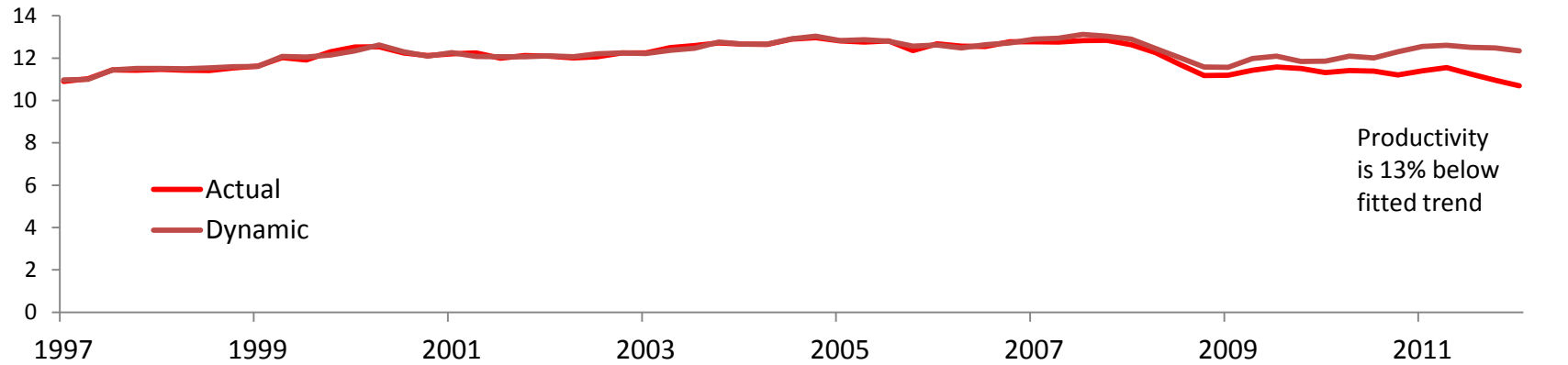
£bns



Hotels, pubs, restaurants. Annual output ~ £35bn. Credit-intensive. Productivity flat since 2010, consistent with falling credit.

Transport and Storage

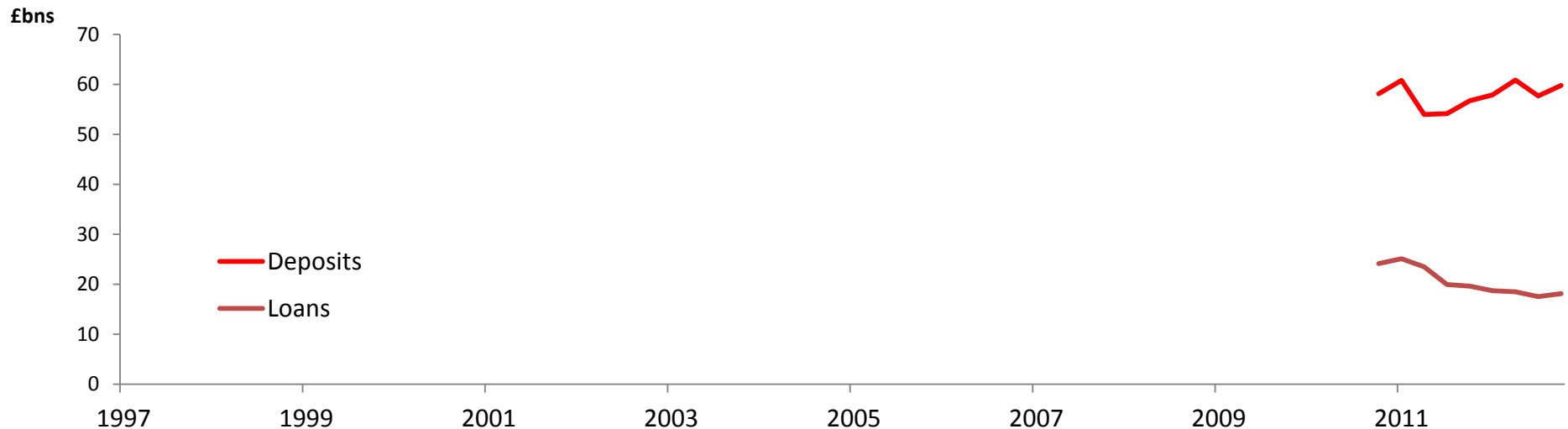
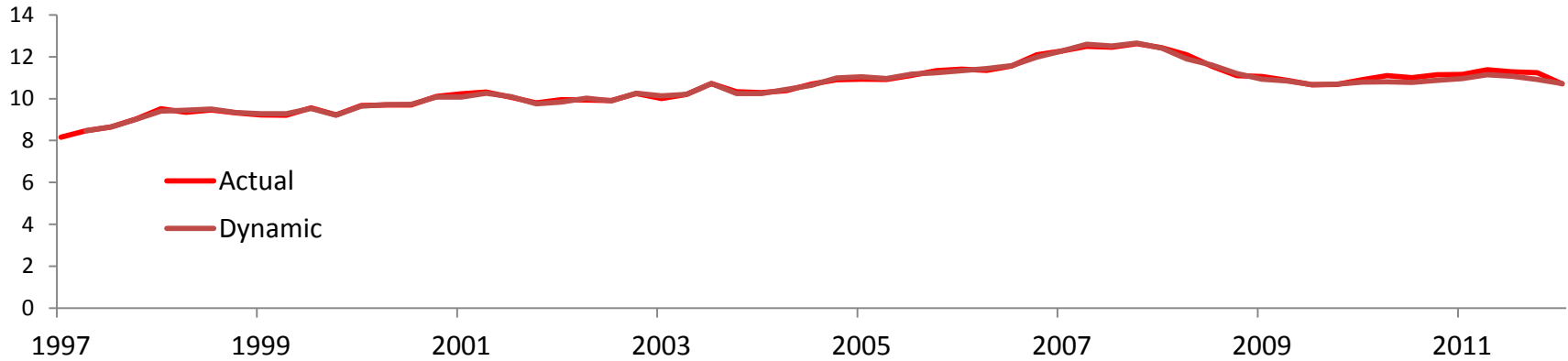
Actual & Dynamic Fitted Productivity: Transport & Storage



Rail, taxis, air, warehouses, post. Annual output ~ £62bn. Moderately credit-intensive. Productivity still below pre-crisis level.

Professional, Scientific and Technical

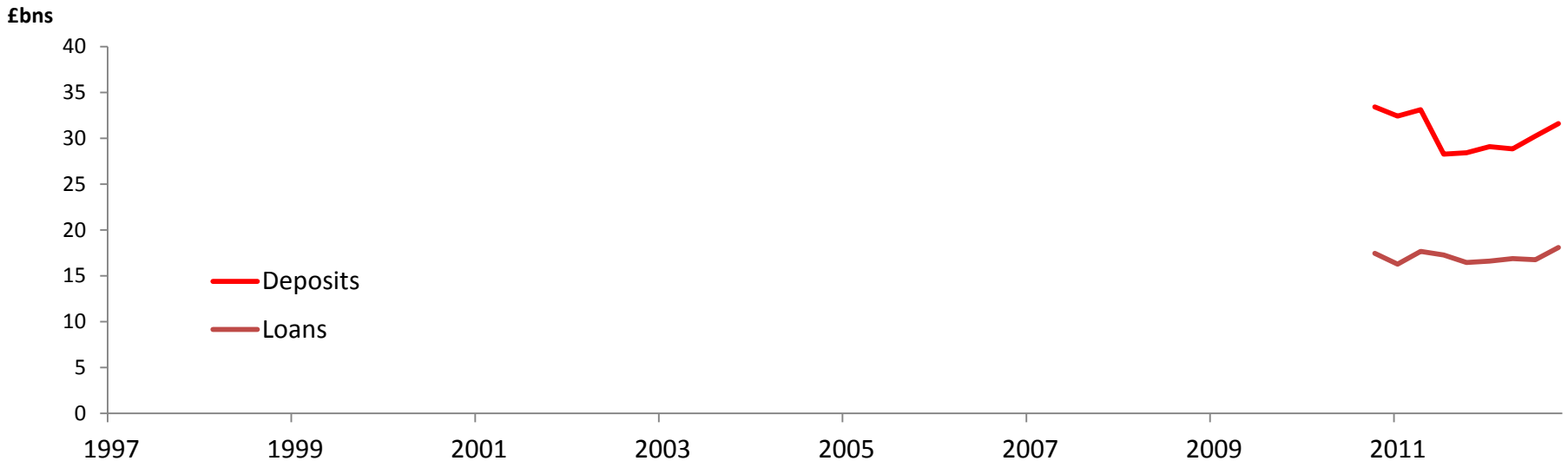
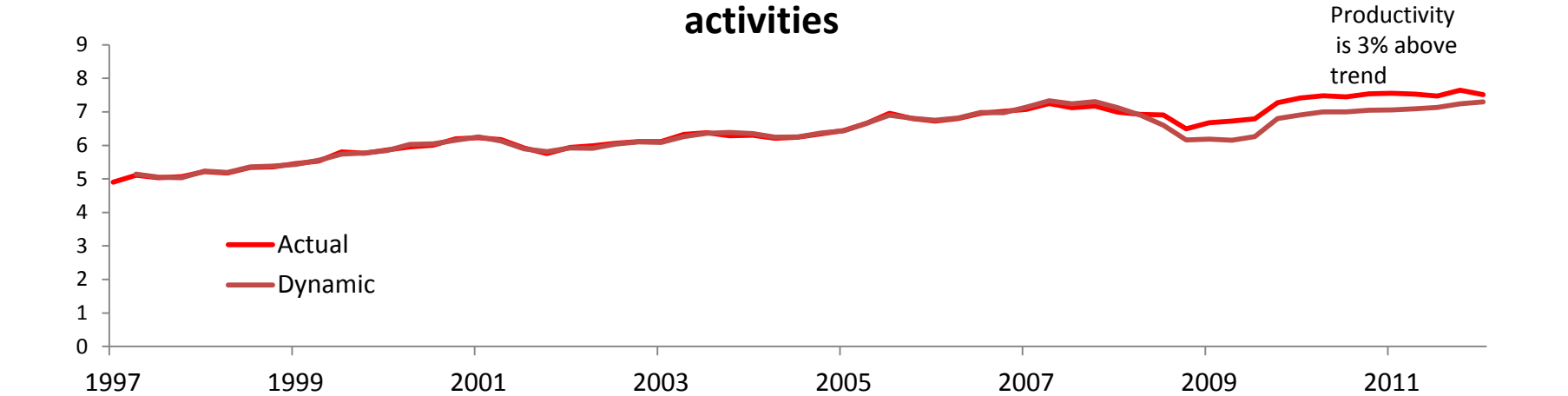
Actual & Dynamic Fitted Productivity: Professional, scientific & technical



Legal, management consultants, architects, advertising, scientific R&D. Annual output ~ £92bn. Not credit-intensive. Productivity in line with pre-crisis trend.

Administrative and Support Activities

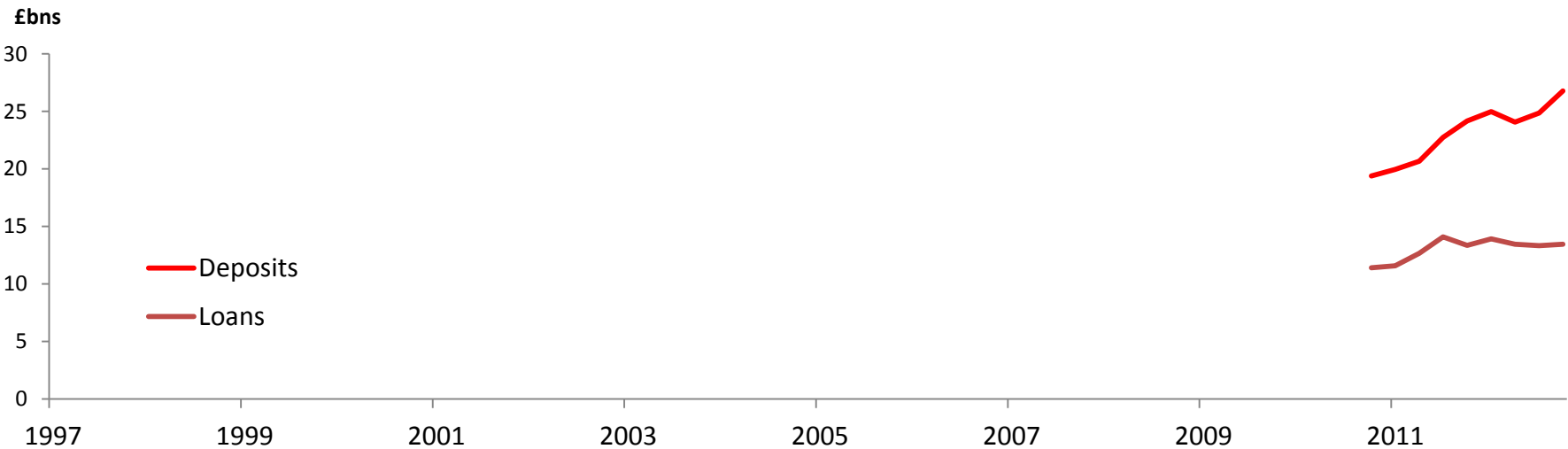
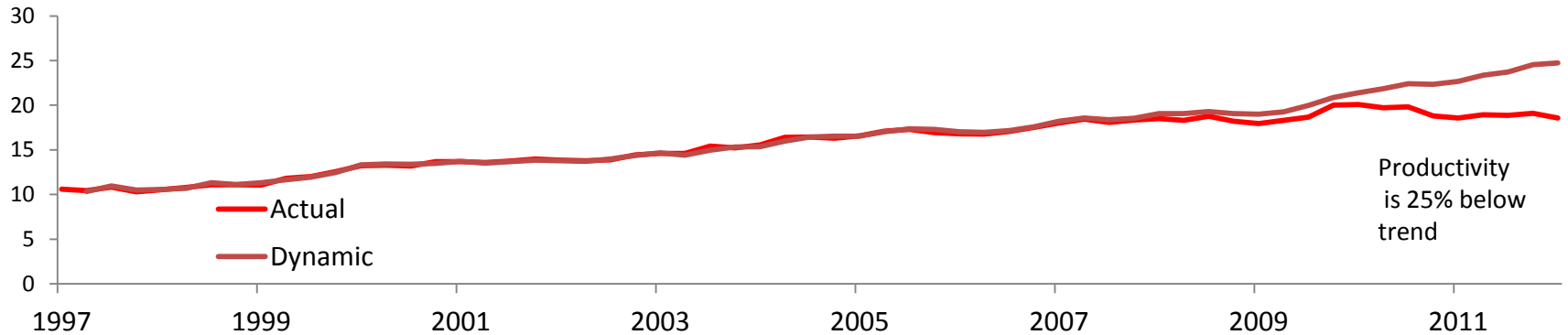
Actual & Dynamic Fitted Productivity: Administrative & Support activities



Rental & leasing, employment agencies, travel agents, call centres. Annual output ~ £56bn. Not credit-intensive. Productivity above pre-crisis trend.

Information and Communication

Actual & Dynamic Fitted Productivity: Information & communication



Publishing, film, broadcasting, telecoms, computer programming, data processing.
Annual output ~ £77bn. Not credit-intensive. Productivity below pre-crisis trend.

Early Findings



Decomposition of aggregate productivity growth

We follow Melitz and Polanec (2012) in using dynamic Olley-Pakes decomposition:

$$\Delta\Pi = \Delta\bar{\pi}_C + \Delta\text{COV}_C + s_{N2}(\Pi_{N2} - \Pi_{C2}) + s_{X1}(\Pi_{C1} - \Pi_{X1})$$

Decomposition relies on two time periods (**t=1** and **t=2**) and three categories of firms: **continuers, C** (both present at time t=1 and t=2); **entry, N** (only present at time t=2) and **exit, X** (only present at time t=1)

Four **components** of aggregate productivity growth, the first two for continuing firms:

- 1) **Within** -> *positive* if improvement in productivity is occurring within firms
- 2) **Reallocation** -> *positive* if productivity and market shares become more positively correlated over time
- 3) **Entry** -> *positive* if entrants have higher productivity than continuers at the time when entry takes place
- 4) **Exit** -> *positive* if firms that exit the market have lower productivity than continuers at the time when exit takes place

DATA

ARD dataset to **2009**, micro-data based on a register of businesses:

- data for manufacturing available back to 1974, total economy data (i.e. including services) available from 1997
- possible to measure entry and exit for the population of firms
- but financial information only available for a subsample with a rotating sample strategy (i.e. small firms not included in consecutive years)
- we therefore identify surviving firms wrongly classified as entry and exit and exclude them
- our firm level sample is weighted to be nationally representative, aiming at mimicing ONS published totals
- we exclude sectors not fully covered in the ARD and sectors where inputs are thought not to be directly comparable to measured outputs
- we focus initially on GVA per employee.

LABOUR PRODUCTIVITY RESULTS

Survivors

	Within	Reallocation	Entry	Exit	$\Delta\Pi$
All Economy					
2003-2006	0.058	0.024	-0.032	0.069	0.119
2006-2009	-0.117	0.068	-0.066	0.082	-0.033
Change	-0.175	0.044	-0.034	0.013	-0.152

- The **within** component drops quite substantially between 2003-2006 and 2006-2009 and becomes negative in 2006-2009
- Reallocation term and exit term are positive and larger in 2006-2009 than 2003-2006
- The entry term is generally larger in absolute value in 2006-2009 compared to 2003-2006

	Survivors				$\Delta\Pi$
	Within	Reallocation	Entry	Exit	
Manufacturing					
2003-2006	0.101	-0.022	-0.015	0.059	0.123
2006-2009	-0.181	0.056	-0.022	0.085	-0.062
Services					
2003-2006	0.049	0.052	-0.036	0.070	0.135
2006-2009	-0.086	0.066	-0.059	0.075	-0.004
Other (construction and utilities)					
2003-2006	0.048	-0.028	0.026	0.031	0.076
2006-2009	-0.113	0.005	-0.087	0.096	-0.099

- Result on importance of within component is confirmed when we split our data by broad sectors
- Contribution of reallocation increased between 2003-2006 and 2006-2009, particularly in the manufacturing sector
- Contribution of exit increased between 2003-2006 and 2006-2009, but not in service sector
- Entry more of a drag on productivity growth 2006-2009 than 2003-2006, particularly in the other sector, but also in services

	Survivors				$\Delta\Pi$
	Within	Reallocation	Entry	Exit	
Small					
2003-2006	0.073	0.115	-0.062	0.084	0.210
2006-2009	-0.108	0.200	-0.176	0.122	0.037
Medium					
2003-2006	0.045	0.109	-0.039	0.024	0.139
2006-2009	-0.141	0.078	-0.043	0.058	-0.049
Large					
2003-2006	0.001	0.035	0.013	0.005	0.054
2006-2009	-0.113	0.028	-0.011	0.013	-0.084

- Reallocation increased between 2003-2006 and 2006-2009 in small size firms only
- Entry term seems to be more of a drag on productivity growth in small firms (comparing 2006-2009 to 2003-2006)

Findings from initial decomposition analysis

The **within** firm component more than accounts for the drop in productivity growth between 2003-2006 and 2006-2009 (Crawford, Jin and Simpson, 2013; Barnett *et al.*, 2013) :

- Normal cyclical response in early stage of recession?
- What is going on within the within component?

The **reallocation** and the **exit** terms are adding more to productivity growth in 2006-2009 than 2003-2006:

- cleansing hypothesis of the recession (i.e. downsizing/exit of less productive firms)

But the **entry** term contributed to a bigger reduction in productivity in 2006-2009 than in 2003-2006

- potential distortions to reallocation dynamics in the recession

Overall, the within component is driving our results explaining the largest part of the productivity drop between 2006 and 2009



Next Steps



More productivity decompositions

Extend the analysis to incorporate 2011 when available on SDS:

- This will enable us to look not only at the initial drop in productivity but also at its **stagnation** in more recent years

See how this recession differs from the one in the 1990s:

- Due to data limitations this will be possible only for the **manufacturing sector**

Look not only at labour productivity but also at TFP

Robustness checks:

- Compare **ARD** results with those using **FAME** data



Examine the potential for credit constraints to influence firms' behaviour

Distinguish between more and less credit constrained firms:

- We observe companies' gearing ratios, short term bank overdrafts and loans, name of bank and indicators of financial performance

Devise a suitable experiment:

- Empirical verification of identification strategy (placebo checks)
- Comparisons to earlier recessions limited

Data:

- This analysis relies primarily on the FAME data
- Linking to ARD beyond scope