Long and short-term effects of the financial crisis on labour productivity, capital and output

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In the period before the Great Recession began in early 2008 the growth of labour productivity in the United Kingdom had been quite rapid and higher than in most other major economies. Labour productivity fell sharply during the recession proper (the period when output was falling) but this was not very surprising; the same pattern has been found in earlier recessions. What is much more surprising is that as the economy began to recover following the trough of the recession in 2009 Q2, labour productivity did not also recover. In 2012 Q1, four years after the onset of the recession, it was still below its previous peak in 2007 Q4 and well below the level expected on the basis of the pre-crisis trend.

Some insight into the puzzle comes from breaking down the economy into 17 sectors. Excluding sectors where measurement is problematic does not explain the slowdown. Nor can it be explained by a shift in the labour force towards sectors with a low level of productivity.

Two main hypotheses have been proposed to explain the productivity puzzle. First, firms may be hoarding labour in anticipation of a recovery in demand. If so, productivity growth will recover when demand recovers and eventually the *level* of labour productivity will get back to where it would have been if the recession could somehow have been avoided. The second hypothesis is that the financial crisis and the recession to which it gave rise have permanently damaged the productive capacity of the economy. According to this hypothesis, even if the productivity *growth rate* returns to its pre-crisis value, the productivity *level* will always lie below the path which it would have followed in the absence of the crisis. This paper is mainly devoted to the second hypothesis.

In testing the capacity damage hypothesis it is important to allow for the possibility that financial crises have both short-run and long-run effects and that these effects may be on both the level and the growth rate of productivity. It will then be an empirical issue how large or small these effects are. A model with these properties is set out and tested empirically on a panel of 61 countries over 1955–2010 by combining data from two sources. Data on productivity (GDP per worker) are from The Conference Board's Total Economy Database of national accounts. The number and duration of financial crises come from the data underlying *This time is different: eight centuries of financial folly*, by Carmen Reinhart and Kenneth Rogoff. Reinhart and Rogoff define six types of crises: currency, inflation, stock market, external debt, domestic debt, and banking. Interest focuses on the last type, banking crises, since in the absence of a banking crisis the other types are found not to have significant effects on productivity.

The results suggest that banking crises as defined by Reinhart and Rogoff have on average a substantial and statistically significant effect on both the short-run *growth rate* and the long-run *level* of labour productivity. The short-run growth rate of labour productivity is typically reduced by between 0.6% and 0.7% per year for each year that the crisis lasts and the long-run level by between 0.84% and 1.1% (depending on the method of estimation). No such significant effects were found for the five other types of financial crisis distinguished by Reinhart and Rogoff.

One channel through which banking crises do their damage is through their effect on the long-run level of capital per worker. We find that this level is on average reduced by about 1% for each year of crisis. We also find that banking crises have a long-run, negative effect on the employment ratio (due to either higher unemployment or higher inactivity rates): the effect on GDP per capita is double the effect on GDP per worker.

Three qualifications should be noted. First, these results are for all countries combined — advanced, emerging and developing. If only advanced countries are considered then banking crises do not have a significant effect on the long-run productivity level. Second, the banking crisis variable is a zero/one dummy and there is no measure of the severity of any crisis, other than the circular one of looking at its consequences. Because of this second qualification, one should be cautious before taking too much comfort from the first one. It may be that the insignificant results found for the advanced countries just reflect the fact that advanced countries have up to now (and the data stop in 2010) not experienced crises severe enough to generate a statistically significant effect on productivity levels. And third, these are only average effects. No banking crisis is alike. In any particular country or particular period, the impacts may differ substantially from the mean.

Finally, even if the findings on the capacity damage hypothesis are accepted, this does not force automatic rejection of the rival labour hoarding hypothesis. The latter must be assessed on its own merits. However our finding of a *permanent* effect of banking crises on the labour productivity level cannot be attributed to labour hoarding.