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Quantitative easing of an international financial centre: how central London came so well out of the post-2007 crisis

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**Quantitative Easing of an International Financial Centre:
how central London came so well out of the post-2007 crisis**

Three Motivating Snippets

Hat check girl: "Goodness, what beautiful diamonds"; Blonde customer: "Goodness had nothing to do with it, dearie".

Mae West, *Night After Night*, 1937

'The problem with QE is: it works in practice, but it doesn't work in theory'.

Ben Bernanke, *final Q & A as Chair of the Fed*,
2014

'A rising tide raises all (luxury) yachts' Ajay Kapur, *Citigroup Plutonomy Report 2*,
2006.

Introduction

Seven years into the current economic depression, consciousness of the extent to which London - which jointly fathered the financial crisis (Wojcik, 2013) - escaped lightly from its consequences (even if many individual Londoners did not) still seems to be growing, though there is not yet an adequate explanation of how it happened. Rhetorically, the terms of discussion polarise between: a view of the city as rising to new challenges of change, competition and creativity, and triumphing over its rivals in strictly economic terms; and one which sees it as having been unreasonably favoured by those public and private sector decision-makers applying the prescribed austerity – again triumphing, but in more political terms.

Adopting a rather more detached analytic perspective, and focusing on the specific puzzle as to why London's overall employment trends have been so favourable since 2007 (against the norm elsewhere), there currently seem to be three kinds of potential explanation in play. *One* of these suggests that, irrespective of institutional responses to

the banking crisis and fiscal deficit, the London economy is simply much better placed than its rivals to cope with their aftermath, given its long term sources of competitive advantage (‘when the going gets tough, the tough get going’ ?) . A *second* takes a more contingent approach, accounting for the relatively favourable employment trends in London in relation to several independent factors which have conditioned the way in which post-2007 cut-backs (in jobs, infrastructure investment and/or public services) came to be applied in London (with the city ‘punching beyond its weight’ ?). The *last*, almost ignored so far, posits a more straightforward link with the character of the financial crisis, and the massive scale of the support that the state has felt obliged to deploy since then, to the great benefit of the big beasts of UK financial services, and London as an international finance centre – rather than to other parts of the national economy (‘goodness had nothing to do with it’?).

The distinctive focus of this paper is on exploring the third of these. But it starts by examining the character and unexpectedness of employment growth in London since autumn 2007, and then discusses the limits to how much of this remarkable development the first two types of explanation could account for, alone or together. When they prove inadequate to explain how London weathered the aftermath of this crisis so very much better than the last one, two decades earlier, attention then turns entirely to the significance of the support accorded to the financial sector by the state (and indirectly the taxpayer/saver). It makes a case firstly in terms of the massive scale of that support, and its concentration on London-based operations, and then by seeking to establish credible ways in which bail-outs, implicit subsidy and quantitative easing can have been translated specifically into employment/spending power within London – and overseas – rather than elsewhere within the UK. The conclusion addresses the question of how far recent indicators of a vigorous boom in the central London economy (particularly) represented the beginnings of another speculative cycle, after one whose bust phase was effectively masked, rather than more evidence of transition to a stable and sustainable growth path¹.

Differential Employment Impacts of the Financial Crisis 2007-14: Central London versus the RUK

Over the half century before the financial crisis, employment trends in (Greater) London² reflected three main factors: a continuing secular expansion in business services; limits on space availability for economic activity or worker housing; and a sharp decline in goods-related jobs, where agglomeration economies offered the least advantage.

In the first half of this period, the scale of manufacturing/port transport job loss outweighed that of growth in office employment. But by the early 1980s there were few jobs left to lose in London's goods-related sectors and the balance switched, yielding some net increase in overall employment. The switch-point coincided with several qualitative developments which reinforced these trends: a resurgence of globalisation, involving extended market competition (in services as well as goods); increasing reliance in advanced economies on product qualities as the basis for competitive advantage; and multinationalisation of business and of financial markets via interlinked international financial centres (Buck et al., 2002).

Around these broad long-term trends the city's economy experienced fluctuations, which were very largely parallel to those across the rest of the UK. In the first half of the period these cyclical swings were proportionately smaller than in any other region, whereas in the second half the position was reversed, and they appeared proportionately larger than anywhere else³.

This shift was not simply because of London's more rapid transition from an industrial to a post-industrial economy, but reflected a more general switch in the sectoral and spatial patterns of activity across the British economy. In the earlier period cyclicity⁴ was bound up with the degree to which industries served investment/consumer durables markets, where demand was more responsive to the current state of liquidity and of the 'animal spirits', in the *national* economy. The cyclical sensitivity of regional employment then essentially reflected their industrial mix (Gordon, 1985). In the later period, sectoral volatility seems to have more to do with the propensity to innovate – being notably high in ITC and financial/business services⁵. The most cyclically sensitive regions were again those which specialised in the more sensitive activities, but the variability now was much greater than purely compositional effects would account for (Gordon, forthcoming). One manifestation of this was a particularly severe reduction in

London service employment, during the last national recession, between 1989 and 1993, when London lost 11% of employee jobs (a drop of 600 thousand) as compared with 4% in the rest of the country. This was the bust after a particularly strong boom, however. And volatility now generally appeared to be a systemic property of innovative regions – reflecting an intimate relation between innovation, ‘buzz’ and speculation, of all kinds, feeding through to regionally significant ‘animal spirits’ (Gordon, 2011).

It was quite reasonable to expect then that, when (eventually, in autumn 2007) the 'sub-prime' crisis signalled another on-coming bust (20 years after Black Monday), London would be in for substantially more than its share of national job losses. This did not prove to be the case, however: the city's employment continued to grow, with only a modest hiccup, after the second, ‘Lehman Brothers’, shock (in autumn 2008). Taking average employment in 2007 as the benchmark - and using a Labour Force Survey-based measure counting all ‘main jobs’, whether employed or self-employed, with part-time posts treated as half-jobs - there was actually a net *increase* in London over the next 6 years of 277 thousand (8%) as compared with a net reduction of 329 thousand (2%) across the rest of the country. Even more strikingly, virtually all of London's net increase was concentrated in the City of London and 4 adjacent boroughs⁶, where full-time equivalent (FTE) numbers increased by 259 thousand (20%). For these central areas this actually represented a substantial acceleration of growth as compared with the 3 previous years (from 1.9% to 3.4% p.a.), whereas elsewhere in London, as outside, there was a downturn (from gains of 0.8% p.a. across all other areas, to net losses of 0.1% p.a.)⁷. This positive differential was evident every year, except for the boroughs' single year of net job losses (in 2008/9) at a rate close to the national average. But even then, its level of employment dropped only just below that of 2007; before powering ahead, and getting in 3 years of really strong growth before employment in the rest of the country started to recover, in 2013 - if still with growth rates well below those in central London)⁸. This experience contrasts very strongly with that in the last recession, when it took a full decade for the central boroughs to recover their (1988) peak level of employment – as well as with the norm for European capitals during this one (Dijkstra et al.' 2015).

Using ABI/BRES (employer-based) estimates to look more closely at the spatial pattern of change⁹, a coherent zone of strong employment growth is found across an area extending some way beyond the historic (rail-terminus-based) boundaries of Central London, with an eastern outpost around Canary Wharf on the Isle of Dogs¹⁰. On an FTE basis, *employee* jobs alone grew by 208 thousand (14%) within this Central London Zone (CLZ) between 2007 and 2013, against a net decrease of 484 thousand (-2 %) in the rest of the UK.

Despite this remarkable degree of spatial clustering in employment growth, it does not appear to be bound up with a single functional cluster of particular economic dynamism. Whether this might be the case is not very easy to test, because - though casual empiricism suggests all sorts of interdependence among the activities of London's central business district, and interested parties encourage the idea that everything ultimately depends on financial services (or even its global sector) – there has been no substantial research effort to quantify the strength and structure of these linkages. However, the fact that at a detailed sectoral level CLZ trends look very uneven, with most broad (service) sectors including some high growth activities, not obviously linked to those in others, suggests that several distinguishable groups have all done very well within the CLZ, for one reason or more.

A rough but plausible grouping of these expanding activities involves half a dozen rather different foci, each contributing significantly to overall job growth¹¹:

1. *Finance* (including IT within the financial districts) adding some 20 thousand jobs;
2. *Business administration* (head offices, and management consultancy) up by some 50 thousand jobs;
3. *Property Development/Services* (construction, architecture and real estate) up by around 35-50 thousand¹²;
4. *Creative Commerce* (publishing, broadcasting, film/video and advertising, plus some IT in the creative districts) up by some 30 thousand;

5. *Public Services* (administration, health, education and social care) up by some 50 thousand;
6. *Tourism* (hotels and restaurants) up about 20 thousand.

Though wide-ranging, this listing of expanding activity-clusters actually excludes many core central London services (e.g. law, accounting, theatres, and retailing). Information/digital technology activities, which did show substantial employment growth, are not separated out since they seem to play distinct (support) roles in several clusters (including finance, creative commerce and business administration), to which their job increases were imputed on the basis of the localities in which they occurred. For each of the six clusters which are distinguished, employment trends in the CLZ were much more positive than in the rest of the country. But the relative scale of change recorded for particular clusters also clearly reflects some national realities; for instance the fact that construction, banking, and publishing experienced job losses across the most of the country, while head offices/consultancy showed strong general growth.

Faster growth of *each* of these clusters within the Central London Zone, relative to their performance elsewhere, made an important contribution to a large (and accelerated) job growth in the CLZ during post-crisis years. This is not reducible *either* to the growth of a single cluster *or* to a generalised upturn in competitiveness of the city's service economy.

Conventional Explanations of London's Positive Employment Trends

London's Structural Advantages

One strand of commentary on (Central) London's success in sustaining and then expanding employment levels during the post-crisis period simply draws attention to all those sources of structural advantage (or absence of key disadvantages) which have generally favoured its economic progress, over that of other UK regions, during the past 30 years or so. A short list of these includes: sheer scale; a particularly strong base in the advanced business services which have prospered everywhere during this era; the absence (or earlier demise) of the production sectors which have been in long term

decline across the UK; a strong capacity to attract, retain and develop a highly qualified workforce; a very flexible labour market; a large and sophisticated customer base for high value products; and particularly strong international linkages and information networks (Buck et al., 2002).

To apply these as explanations for trends since 2007 - and why these differ from previous crisis/recovery sequences with less favourable employment outcomes – requires some reason for expecting *either* that some of these advantages have become substantially stronger since those earlier episodes, *or* that the particular way in which the wider economy has subsequently evolved would now make some of them much more salient.

One obvious structural advantage has been in the *industrial mix* of (Central) London jobs, with a very few in the manufacturing sector, where employment elsewhere fell by some 20% (600 thousand jobs), and substantially more in business services where it actually grew by half that amount. This compositional difference alone could account for 6 out of the 22 percentage points difference in proportionate employment change between the 5 central boroughs and the rest of the UK. The significance of this factor is not peculiar to this post-crisis period, however, being central to longer term trends in the area since conventional manufacturing disappeared from central London. To see what it might explain in relation to this particular downturn, we need firstly to express (annual) rates of employment change for each sector in terms of deviations from the longer term (peak-peak) rates of change – and then compare the latest downturn with its predecessor in the early 1990s¹³. On this basis, sectoral variations in the impact of the downturns look more modest. For the 1990s case, the sharpest decreases nationally *were* experienced in production industries. After the 2007 crisis, however, it was construction which had the severest job losses, followed by a wide range of commercial services (including in which those central London specialises in), though with professional/technical services showing little impact, and public services actually expanding their employment¹⁴. In neither case then does it seem that London's particular responsiveness (in the 1990s) or unresponsiveness (post-2007) can be attributed to its pattern of sectoral specialisation.

In *occupational* terms also it might be thought that (Central) London would have been substantially favoured by its bias toward jobs demanding higher levels of qualification - given that employers are (rationally) expected to respond to *temporary* downturns in demand by hanging on to, or 'hoarding' those workers who would be most expensive to replace and reintegrate when the upturn comes, while releasing redundant workers in less skilled jobs. This rule of thumb may not fit the post-2007 situation, however, for a couple of reasons. The first is that, once the scale of the financial shock became evident (after a year or so of 'phoney crisis' for most sectors) few can have expected a rapid recovery in demand. The other is that the principle has less force in a thick labour market such as London's where there are many employers of any particular skill type, and workers are less likely to drift away during a downturn (Buck/Gordon, 2000)¹⁵. As it turned out, while different skill groups were unevenly affected by employers' responses to falling demand, in this occasion it did not simply favour those in jobs with more qualified workers, or those traditionally concentrated in central London. Thus, while across the country as a whole it was professional jobs (the most over-represented group in the CLZ) which grew fastest between 2007 and 2013, they were nearly matched by caring, leisure and service occupations (of which the CLZ has relatively less); at the other extreme, the two groups showing the fastest contractions were process/machine operatives and secretarial/administrative workers - one being much under-represented in central London, while it has an above average proportion of the latter. It is a very mixed picture, which arithmetically suggests just a slight occupational bias in central London's favour (of about 2%) over this period - maybe no more than in pre-crisis years.

A more original hypothesis has linked London's performance after this crisis to the emergence of more entrepreneurial combinations of the (*artistically*) *creative*, and *IT talent* that the city attracts. The most publicised versions associate this with an emergent 'Tech City', in regenerated areas of inner east London, with some recent government support. These accounts tend, however, to conflate: a qualitative image, based on (*artistically*) creative businesses in the Shoreditch and Clerkenwell areas (just north of the City), that emerged during the dot-com bubble; a much larger-scale (post-2007) growth of IT businesses in core financial districts (of the City itself and Canary Wharf); and

potential development space further east around the Olympic Park (Whitehead et al., 2012; McWilliams, 2015). In fact, though the recovery has seen a substantial growth of jobs in creative commerce (specifically advertising and video production), this has been largely in established West End and Holborn concentrations, rather than the inner east. In relation to the more novel developments of creative tech, and the contribution to these of official ‘Tech City’ initiatives, whatever their longer term prospects, the available research (Nathan and Vandore, 2014) suggests that they cannot yet be credited with a substantial role in the CLZ’s post-2007 employment boom.

A much clearer boost has come from (central) London’s established strength as a destination for *international tourists*, with approaching half of their UK expenditure (D/OE, 2012), and growth that actually accelerated after the crisis. Demand in this sector is income elastic (and thus sensitive to recession elsewhere) but also price elastic¹⁶ and thus one of the significant winners from the large sterling depreciation (of around 25%) occurring alongside the share price collapse between mid-2007 and early 2009. The outcome across London as a whole was that spending by these visitors fell back by under 3% in the first 2 years of the crisis, and then resumed the rapid growth path of the boom years (averaging 9% p.a. since 2009). Rough arithmetic on elasticity estimates and employment figures for the sector suggests that sterling depreciation may well have contributed 20 thousand FTEs to job growth in the CLZ.

Another of London’s established strengths which might have contributed to growth over the period stems from a specialisation in highly differentiated *elite consumption opportunities* with a ‘global city’ cachet. A historic competitive advantage in serving this market has been reinforced over the past 30 years as increased income inequalities within the UK have boosted the spending power of the top tail of the city’s (increasingly) skewed occupational structure (Buck et al., 2002). This trend may have been reinforced in one or two important ways since the financial crises.

One is an apparent upsurge in the fraction of a newly wealthy ‘global’ elite with offshore incomes who choose to base themselves for at least part of their time in London. There is

a long run dynamic to their growth, from enjoyment of the social/consumption externalities of living among their peers¹⁷. Stories abound about a distinct influx since 2007 of rich migrants seeking a more secure home for their assets. But hard facts about numbers and economic impacts (beyond those on property prices in the most desirable locations) are elusive.

The other, combines the propositions of Kapur et al (2005, 2006a/b) about the high consumption propensities among a growing superclass of (high-earning *and* asset-rich plutocrats, with a common perception that they alone may have prospered from the crisis and its aftermath. Well documented reports of CEOs' soaring salaries/reward packages during this period lend credibility to the hypothesis. But, over the span of the whole 6 year (crisis, recession and recovery) period considered in this paper, the evidence is that neither earnings nor wealth levels have grown especially fast among those in the plutocratic class (say the top 1% or 0.1%). Reversing the pattern of pre-crisis trends, evidence from tax returns actually suggests no overall income growth at all the 99th percentile in the UK (up to 2012/3), while increasing significantly at lower levels (HMRC, 2015). Among the top 0.1% too, runaway growth in current incomes, before the crisis, was reversed after 2009 (Alvaredo et al., 2015). In relation to wealth, while the share of the top 1% does seem to have increased by a further couple of percentage points since the crisis, total personal wealth in the UK, which is estimated to have grown by about 50% in the years before, quickly fell back again; though recovering from 2011 on, it only regained its 2007 level in 2013 (CSR, 2014). For the 2007-13 period as a whole then, the implication is that wealth levels of the super-rich had growth quite modestly (by about 10%), though rising strongly during the recovery phase. Given the particular importance of financial (rather than property) assets to the plutocracy, the FTSE index provides another (simpler) indicator of likely trends in their wealth: in real (price adjusted) terms, this fell by about 40% in 2008/9, undoing the gains of the previous 4 years, but then quickly turned up again, recovering about half the lost ground by 2013. Similar trends in the purchasing power of the globally mobile elite are reflected in an index of London prices for prime international residential properties which, having fallen by about 25% in 2008/9, then turned around and advanced steadily to a point some 50%

higher by 2013 (KF, 2014). In summary, then, it seems that the plutonomy factor can scarcely explain London's unexpectedly strong performance over the period as a whole; but that it might have contributed substantially to the strength of the economic upturn in the second half of the period.

Spatially Significant Policies (public and private)

Another line of explanation involves the idea that the central London economy may have been particularly favoured during the post-crisis period by central government initiatives or strategic shifts on the part of corporate decision-makers with London-centric views. Potentially significant examples among these include both major infrastructure projects of the Olympic Games and Crossrail, and apparently quite uneven effects in the application of rationalisation/austerity programmes in the private and public sectors, as between (central) London and other parts of the country.

The London Olympic bid (in 2004) and award (in 2005) both date from the heyday of the long boom, and even the quadrupling of its budget (to £9.2bn, in March 2007) pre-dated recognition of any emergent crisis. Crossrail as a project had a very much longer history (including a government supported bill in 1991) and had been approved in principle on several occasions (though without assured funding), before the 2010 spending review finally spelled out how the £15 bn. costs would be met, including a £5bn. contribution from central government. Investment in both projects is spread over a number of years: including 5 years of concentrated activity in the case of the Olympics and some 9 years for Crossrail. Most of the public sector activity for both¹⁸ is included within the capital account of the Treasury's Public Spending Statistics under the Economic Affairs heading¹⁹. For London as a whole, this shows a growth from £2.4 bn. in 2007-8 to a peak of £4.2 bn. in 2009-10, before settling back to £3 bn. in 2012-13 – while the total in other regions fell from £23 bn. to £12 bn. and then £10 bn. Given the timing of the Olympics, and the fact that the main site lay mostly outside the central boroughs (and wholly outside the CLZ) it is just Crossrail that is likely to be of significance in relation to central London employment growth between 2007 and 2013. Its construction workforce has been

around 10 thousand, with the great majority probably employed within the central boroughs, where both tunnelling and new stations are concentrated, contributing maybe a quarter of the 35 thousand growth in construction jobs recorded there between 2010 and 2013²⁰.

In addition to these impacts of discrete investment projects, there are ‘policy’ issues also about the spatial structuring of retrenchment in both public and private sector activities in the face of revenue and fiscal shocks. These questions arise particularly, since both private headquarters and public services appear as activity clusters with expanding employment recorded in central London.

Within the public service sector²¹, some of the recorded employment increases (e.g. in primary schools or social care services), funded on a more-or-less formulaic basis are likely to reflect particular sources of local demand growth, as with the growing school age population in areas of recent immigration. Others (including universities and hospitals) where there is more active competition for students, programmes and advanced facilities, may reflect the changing terms on which this is carried out (e.g. with full-cost fees applied to all students) offering a greater potential for big city institutions with strong national/international reputations to prosper.

But there is also a generic issue, straddling the public and private sectors about how head offices and other strategic functions have fared in the face of general rationalisation pressures. A common theme here seems to have been a strengthening of these core operations, while cost saving has been pursued elsewhere. In the private sector, head offices were newly recognised as an ‘industry’, in the 2007 version of the SIC, which had previously just distinguished the HQs of multi-sectoral conglomerates. Since a first appearance in the 2008 ABI/BRES, the head office category has continuously expanded, adding some 120 thousand jobs nationally (+92%) over the next 5 years, including 25 thousand in the CLZ (+155%)²². A parallel process seems to have operated within the mainstream bank/building society sector, whereby boards have sought to make good the losses (and legal penalties) incurred in their ‘wholesale’ investment banking operations by cost-cutting initiatives focused on retail banking and its back-office supports out in the

regions. Between 2008 and 2013, while (on ABI/BRES figures) the sector's employment in the central boroughs grew by some 14 thousand (14%), across the rest of the country it fell by 40 thousand (11%). Within the civil service too, job reductions over this period were much more modest in central London, because the one significant group to have increased their numbers (by 10%) were the policy-grade officials (1-7) in Whitehall, directly supporting ministers. Across the sectors then, the chosen forms of structural adjustment since the crisis - reinforcing strategic functions while rationalising jobs in routine production, support and client-facing activities - have indirectly afforded a significant boost to Central London's share of national employment.

Summary: how much can these explain?

To try to sum up this section's survey of more-or-less conventional explanations of Central London's strong employment performance since 2007, there are really three aspects that need to be explained:

- why employment grew there when it did not in other parts of the country;
- how it managed to grow more rapidly in the years after 2007 than in the boom years before; and
- why during the recession years it also managed to put on a substantial number of jobs whereas in the early 1990s recession, which had some similar features, it had very large job losses.

In relation to the *first* question, our review of 8-10 potential explanations suggested that broad pattern of sectoral specialisation as the clearest positive factor, backed up by its particular niche in a growing head office sub-sector, Crossrail construction work, devaluation-assisted tourist growth, more resilient or favoured public services, and a slightly favourable occupational mix. Some of these are hard to quantify, but together it seems that they might possibly account for 15 percentage points out of the 22 point gap between Central London and Rest of UK employment growth between 2007 and 2013.

Turning to the *second* question, the issue is harder, because central London's sectoral/occupational specialisation assets would have been at least as relevant during the era of sustained growth before the crisis, as after it. What is left as potentially significant

contributors to improved performance after 2007 then seems to be: Crossrail: the new head office boom: and enhanced price competitiveness for international tourism. These would, however, have to be set against some (rather strong) counterfactual expectation of crisis/recession induced contraction across a wide range of marketed services – and seem quite inadequate to outweigh those and deliver the observed overall acceleration of employment growth trends.

The *third* question, involving comparison with the early 1990s recession (when the 5 central boroughs lost 136 thousand jobs, faring as badly as the rest of London, and much worse than areas outside), picks up on what seems the most obvious such counterfactual. In absolute terms, the fact that such large job losses were not repeated after 2007 must partly reflect the fact that output contraction across the whole country was accommodated rather more this time by reduced productivity/earnings than massive redundancies. But, if we focus on the relationship with national trends, the shift between the two recessions from much worse to much better outcomes in central London can be accounted for only very partially by any of the ‘conventional’ factors considered in this section, specifically it seems by a combination of Crossrail, increased concentration on head offices, and the devaluation boost to international tourism. For the bulk of the explanation of this crucial shift we have to look elsewhere, and consider what bank support policies can have contributed.

Support for the UK Finance Sector since the Financial Crisis

Since the onset of the crisis, with the recognition in autumn 2007 of sub-prime lending (in the US and on a more limited scale in the UK), UK financial services and their major stakeholders have benefited from three distinguishable types of support from (or through) the state:

- 1 *bail-outs*, designed to safeguard key elements of the banking system (nationally, but also internationally), through a combination of direct investment in vulnerable banks and state initiated restructuring;

- 2 *implicit subsidies* to banking operations during potentially risky times, as an unintended consequence of the market's understanding that similar safeguards were to be expected in any future situations where large/strategically significant banks were at risk; and
- 3 *monetary expansion*, via Bank rate²³ reductions and injections of additional liquidity – including rounds of quantitative easing (QE) and a Funding for Lending scheme – to revive both demand and supply of investment finance, in support of a desired recovery and rebalancing of the UK economy.

Bailouts

Financial bail-out operations in the UK started with efforts in 2007/8 to stem a run on the Northern Rock mortgage bank, and then to deal with the impact on other banks' balance sheets of mortgage-backed securities and other assets that had become illiquid following the sub-prime crisis. For Northern Rock this involved first a special loan facility from the Bank of England, and then nationalisation, with a subsequent sell-off of the more viable banking operations. For the much wider set of banks facing consequential balance sheet problems, a Special Liquidity Scheme was introduced. This was intended simply to resolve these, not to finance any new lending. But it effectively provided subsidised capital to a large number of banks with such problematic assets. At the Scheme's peak in early 2009, £185bn of Treasury bills had been lent by the Bank for a period of up to three years (John et al., 2012).

A much broader UK bank rescue package followed in the (autumn 2008) second stage of the crisis, as the failure of Lehman Bros. in New York set off an international wave of concern about bank stability. This package included both a state guarantee for inter-bank lending and provision for the government to buy bank shares, subject to some policy conditions (on executive pay, dividends and lending policy). This provision was extended over the following year to cover rescue of two of the UK's largest banks (Lloyds and RBS) and another building society (the Bradford and Bingley). The total value of guarantees then rose to a peak of over £1 trn., with an actual cash commitment

of around £120 bn.²⁴. Expressed aims included encouragement of lending to creditworthy borrowers, but the dominant concerns were clearly protecting depositors and maintaining financial stability, by assuring the liquidity and capital of the banks.

Implicit Subsidies

The second line of support to the (big) banks was unintended, but followed from the bail-out experience, taking the form of implicit subsidies, as a perceived government guarantee of their viability allowed the banks to borrow at lower interest rates. Even before the 2007/8 financial crisis, there had been some such subsidy (as now at the expense of savers, rather than tax-payers). But their value grew sharply during these crises, as the objective riskiness of the banks' position was understood, and then (decisively) as bailouts made clear the political reality that *these* banks were 'too big' (or strategically significant) to be allowed 'to fail'. Increased margins of implicit subsidy still persist internationally despite various states signalling an intended shift toward 'bail ins' (by creditors) in any similar situations (Elliott, 2014).

In the UK, recognition of the importance of these subsidies dates from Haldane's (2010) analyses, showing how gaps in rating agencies' evaluation of major banks' creditworthiness, according to assumptions about state support, translated into differences in the borrowing costs they incurred. For the 'big 5' UK banks these were estimated at £59bn. in 2008, and £107 bn. in 2009: with a comparable methodology, IMF (2014) shows the rate of subsidy falling off in each subsequent year, though still well above pre-crisis levels in 2013; with an alternative methodology, they have the interest rate subsidy to 'systematically important banks' rising again in 2012/3 to well above its 2009 peak.

Unintended (and undesirable) effects of these subsidies included both incentivising excessive risk-taking (moral hazard), and encouraging individual banks to expand well beyond the point of maximum (social) productivity. Perversely, both risks of failure and the unacceptability of such events were thus enhanced. And, ironically, restructuring of those UK banks that actually needed bailing out during the crisis served to further increase concentration (Haldane, 2012).

Monetary expansion

By contrast with these forms of support to the (UK) banking system itself, monetary interventions - to reduce the general cost of borrowing, increase liquidity and/or expand the money supply - were directed more at boosting levels of activity in the productive economy. Whether, how, and *where* this is effectively achieved are not clear-cut, however, either in theory or in terms of empirical econometrics. This is the force of Bernanke's parting quote about the major intervention of this kind working 'in practice, but not in theory'.

Three forms of monetary intervention of this kind have been pursued sequentially in the UK since the 2007/8 crises. Initially it involved conventional form of *bank rate cuts*, intended to revive investment and bring forward discretionary spending by reducing the cost of credit (and encourage optimism). The scale of the shock to expectations from the crisis events, plus a 'credit crunch' as lenders sought to tighten up on what now appeared much riskier loans, meant that a rapid series of such bank rate reductions had to be made – with the rate falling to an effective 'floor' of 0.5% in March 2009.

To provide further monetary stimulus to a very weak economy, the Bank of England then followed the example of its US counterpart, introducing the more experimental ('unconventional') programme of asset purchases characterised as *quantitative easing (QE)*. In essence this involved the Bank printing (electronic) money to finance purchase of gilts and other high quality financial assets from private businesses. Quite how this monetary intervention would connect with developments in the real economy was always going to be both complex and uncertain, with theoretical expectations depending on how imperfect the capital market was in practice (Weale and Wieladek, 2015). One of the central ideas was that injecting liquidity in this way, lowering of the yield on less risky asset types, should encourage a flow of funds into the corporate sector, and (crucially) into productive investment ('portfolio rebalancing') – preferably within the UK, though that aspect was not spelled out. The other idea was that potential borrowers with a prospect of redeeming a debt, but concern over its cost, should understand the Bank as 'signalling' an intent to keep the interest rate low beyond the short term. Some (more

uncertain) investors might, of course, also get the message that the Bank did not foresee a strong upturn in demand across the UK economy in the near future. The initial budget for asset purchases was set at £165 bn., with subsequent rounds in 2011-12 bringing the total to £375 bn.. Though the magnitudes are comparable to those estimated for implicit subsidies, it should be emphasised that they are not comparable as forms of support to the financial sector, which benefits from QE only to degree that it can use this to achieve increased returns (or, equivalently, to sustain returns while meeting tighter liquidity targets).

Though the Bank referred to QE as ‘injecting money directly into the economy’ (BOE, 2009), it was not at all closely targeted, and the Bank’s statements were not explicit as to whether ‘the economy’ in question was purely national. The evidence is that it scarcely affected domestic money supply, while bank lending actually fell (Koo, 2015, 10)²⁵. To encourage a more direct flow of funds from banks into the (UK) real economy and get investment moving, a Funding for Lending Scheme was then introduced (jointly with the Treasury) in mid-2012 - modified in the 2 subsequent years and now running into 2016, with incentives related to their lending performance (rewarding SME funding of all kinds, and then just business lending in later versions). The total drawdown on this scheme at the end of 2015 had reached £69bn., but net lending by the banks only became (marginally) positive during that year.

The Spatial Ramifications of Financial Support Policies

Since the 2007-8 financial crises the explicit aims of UK economic policies have involved firstly dealing with the threat/actuality of a recession in the *national* economy, and secondly initiating some longer-term rebalancing of the economy, in structural terms, but also regionally (reducing dependence on the extended London region). Under the Labour government, sustaining public sector demand was used as a means of supporting activity levels, but since 2010 that has depended essentially on monetary policies, which have continued to be essentially macroeconomic in their aims and analytic basis. The Bank of England’s own operational goal is set in terms of securing a level of demand in

that economy consistent with a medium term inflation rate of around 2%. And (with the recent exception of a more targeted Financial Loan Scheme) support policies have been aimed essentially at: securing the bank deposits, and the core set of financial institutions on which the mass of British businesses and citizens depend; and enabling/encouraging financial institutions to resume investing in longer-term/risky business opportunities.

These priorities (and policy tools) left little scope for thinking about the regional dimension of responses and impacts within the UK – though that might be relevant to consideration of complementary policies. More surprisingly, however, potential international implications also seem to have been considered in only a restricted way - in relation to exchange rate impacts, and encouraging complementary action by other major nations. That too is understandable for conventional interest rate-based policies, which operate essentially within/across the (national) currency area. But it seems much less so for the unconventional policy of QE with its less transparent ramifications, in the context of a globalised set of financial markets (of which London is a key hub).

From an economic geographer's perspective there are a set of obvious questions to be asked – crudely about 'where the money goes', in terms of impacts on income streams, activity levels, and employment in different locations. Starting to address these (except in the case of identifiable bailouts) is very difficult, however, because the monetary/financial analyses are not framed in terms that relate at all closely to components of GDP, still less to the sectors and locations where marginal investment projects (or increments to demand) might occur. Even addressing the broadest questions about how QE, for example, has affected aggregate GDP and the inflation rate has required econometricians to make use of high frequency (financial data), and sophisticated monetary models - neither with counterparts at sub-national scales - and omission of the kind of interaction effects that would be crucial to spatial analyses.

There is no realistic prospect (in the near future at least) of moving on to more spatially /sectorally disaggregated questions about, for example, how the central London economy has been impacted – and with what implications for the rest of the UK. But the scale of the monetary interventions pursued during this period is so vast that even identification of any credibly significant source of uneven impacts would be worthwhile. As a starting

point here, some simple arguments and observations are offered in relation to bailouts, implicit subsidies and QE, relevant to how (central) London might have been differentially affected.

In the case of *bailouts*, the very obvious geographic point is that 3 of the 4 banks requiring direct state support were actually headquartered in peripheral regions (in Yorkshire, the North East and in Edinburgh), where the largest numbers of jobs, and probably accounts too, would have been at risk – though the feared knock-on effects would have accrued throughout the country and presumably impacted on London as the national banking centre.

For the *implicit subsidies* accruing to the big banks, the situation is a bit different, in that while we have reasonable estimates of their net value to different sorts of bank (e.g. in IMF, 2014), we don't know what they do with the money. Basically it represents a simple/unwonted bonus to their profit and loss account (and 'value added'), in relation to wholesale/investment banking activities. And ultimately it is expected to accrue to senior employees and shareholders, but its value beyond that of a simple transfer depends on what profit-earning investment opportunities the banks apply it to (Sowerbutts and Zimmerman, 2015). And what consequences there are for employment levels in the sector (and/or its supply chain in IT etc.) depends on how they pursue these. But, bearing in mind that about half of value-added in this sector is absorbed by the salary bill, the potential scale of employment effects within the central boroughs, where investment banking is concentrated, is indicated by the fact that the average of the banks' implicit subsidy in the two peak years was in excess of the total salary bill for these five boroughs (of some £67bn in 2009²⁶).

The case of *quantitative easing* is a lot more complex. In so far as it actually goes (ultimately) to fund additional investment projects within the UK, we might suppose that the corporate and spatial distribution of the extra activity/employment primarily reflected commercial judgements about the expected risk-return relation of these projects. These might be located anywhere, presumably more often in established growth areas than in problem regions – but not to be heavily concentrated in central London. But a couple of

other scenarios could involve impacts accruing more heavily to this metropolitan core. *One* is if it turns out that a large proportion of the funded investment projects are actually offshore, yielding impacts within the UK that are limited to the transaction costs of securing the investment opportunity. The *other* is if, a large part of the actual impact on activity levels came, not from such additional projects, but from the induced effects on asset values serving to revive the boom in plutocratic spending that was cut off by the stock market slump of 2007/8 ('raising all luxury yachts').

The first of these hinges around the issue of the potential scale of leakages from QE within the UK to investment overseas, notably in emerging market economies (EMEs). This possibility seems to have been ignored in the early (spatially blind) discussion of QE in both the US and the UK, and then overshadowed by econometric evidence showing that QE had significantly boosted the level of domestic GDP (by perhaps 2% in the UK, see e.g. BoE, 2012). Arguably that (real) gain is on the modest side, given the degree to which the economy had fallen beneath its growth path²⁷. But, so far there seems to be no available benchmark as to what might reasonably be expected from this unconventional policy instrument if it were operating in a leak-proof setting. Anyhow, questions started to be raised about the diversion of effects overseas in 2010, by a Texan Federal Bank Governor (in the US) - citing firms as saying that more attractive opportunities to deploy cheap money were to be found overseas²⁸ - and by two outsiders presenting evidence to the (UK) Treasury Select Committee in 2012²⁹. The argument was only seriously taken up, however, in mid-2013, when analysts and policy-makers with stakes in these emerging markets started to express alarm about the impact on inward investment of a prospective tapering in the American QE programme.

For the UK case, one simple indicator of the scale of investment into these economies since around the time when QE was launched is the large increase in UK balance sheet assets there. Across 29 such emerging economies outside the Eurozone value of these assets increased from £384 bn. to £645bn. between 2009 and 2013, with their share of all UK-owned international assets rising from 4.4% to 6.7% (compared with a stable figure of around 4.8% in the 4 years before the crisis). Others have pointed to the similarity in

scale between the credit generated by American QE in particular and the flood of dollar-denominated loans/bond purchases into the EMEs (with some leverage) over this period (Wheatley and Kynge, 2015). These reports have been followed up by a number of econometric studies looking for direct evidence of causal links. Most obtain results implying a substantial overspill from QE into these markets (e.g. Chen et al., 2012; Tillmann, 2014; and Rafiq, 2015) - though Ahmed and Slate (2013) find it significant only for portfolio investment, while Weale and Wieladek (2015) detect no direct impact on emerging markets' production, and Fratscher et al., 2013 report the first two phases of QE in the US as having inconsistent effects on the balance of flows.

Bank of England officials do now seem to accept that - because it operates directly on asset markets - QE has a much greater potential than conventional monetary policy to generate sizable international spillovers, including into emerging market economies (BoE, 2015, 8; Haldane, 2015, 10³⁰). This is quite some way short of saying that a major proportion of the additional credit has leaked out in this way but, alongside minimally changed levels of domestic money supply and bank lending to firms, that seems pretty likely. A consequential point which has not so far been picked up is that such large scale leakages out of the country can have substantial implications for the geographic distribution of QE impacts within the country - if these 'spillovers' actually entail substantial and sophisticated transactional activity. That seems particularly likely if (as Wheatley/Kynge and their informants suggest) the translation of gilt sales by businesses into e.g. purchases of money-market instruments in an emerging market currency by investment funds which leveraged in additional finance. Such transactional and support activity, representing the effective basis for GDP impacts within the UK, would have a high likelihood of involving central London-based firms. Hence, I hypothesise, QE with a high rate of leakage out of the UK into economies with higher rates of return/interest and a greater appetite for investment capital (though greater risks also), would be likely to have a great part of its residual domestic impact in/around the international financial centre. We do not, however, yet have evidence of how much transactional activity is actually generated, or where.

In relation to the second scenario, there is a clearer consensus about one of its key premises, namely that QE will have particularly boosted the financial position of the richest groups. As expected, official purchase of gilts led to a substantial upturn in the value of a wide range of financial assets, disproportionately held by more wealthy households – which was expected (in turn) to stimulate higher consumption from asset-rich households. Overall the Bank of England (2012) estimated that QE was likely to have added some £600 billion to total household wealth, with disproportionate gains to the 5% who owned 40% of these assets – though that figure understates the likely concentration of gains, since it includes widespread holdings in the form of bank deposits whose value has not gone up. For the US, where capital gains data are available, Saez (2015) presents a much stronger picture of the concentration of gains from the steep revival in share prices, claiming that almost 60% of the total increase in personal incomes in the US (including such gains) during the 2009-14 upswing accrued to the top 1%. The intersection of these trends with the consumption side of the plutonomy thesis is picked up by Kapur et al (2014) who graphically show the strong relations between the US Fed's total assets (as an indicator of QE) and not just steeply rising NASDAQ/biotech stock prices, but also those of a basket of luxury suppliers (growing 6-fold over this period as an indication of strongly revived elite consumption) - and with growth in London property prices³¹. What remains is to show that a (QE-fuelled) upsurge in spending by the super-rich during the recovery phase has fed into a particular boost to central London activity, though that is a highly credible proposition.

Conclusion

A central theme of this paper has been the idea that the modern (post-1980s) London economy is a fundamentally speculative one – in productive, unproductive and cognitive terms – with the implication that it is subject to wider cyclical swings. That might well be true of all dynamic agglomerations, which would help explain why it was the norm for European metro capitals to experience larger employment falls than other regions following the 2007/8 financial crises (Dijkstra et al., 2015). In the London case, at least,

this tendency toward volatility had suggested that the downturn would be steeper than elsewhere in the UK, though when recovery came it should also be stronger in London – so long as the credibility of central London’s core business sectors had not suffered too much from their involvement in those crises. In fact, however, the evidence of employment trends shows that central London (specifically) was no worse affected by the downturn than other parts of the country (probably less) – though its recovery has certainly been earlier and stronger. In these terms then, over the whole period from 2007 to 2013, this core area has not only out-performed the rest of the country, but also its own pre-crisis trends.

One positive interpretation of this outcome is that it simply reflects an increased competitive advantage for the central London economy. The grounds for believing this to have so improved since the (somewhat similar) recession of the early 1990s are not at all clear, however, though the impact of an (effective) devaluation on an already strong tourist demand would have contributed to this.

If ‘goodness’ is not the whole (or the major) part of the story, then attention turns to ways in which significant developments in either public policy or that of the corporate sector could have made an important difference. In relation to fiscal policies, though the Olympics came and went during this period, the one really substantial factor could have been proceeding with the major Crossrail project, adding both materially to construction activity and symbolically (along with a rash of foreign-financed high rise developments) to confidence in the city’s continuing growth. But additionally, the pattern of growth in head offices alongside cost-cutting in branch establishments, and the particular resilience of central London’s health/education activities, implies strategic shifts with significant positive impacts on this core area of the metropolis. Taken together, however, they go hardly anywhere toward explaining why national recession had so little impact in London – still less why the scale of its preceding boom was not matched by that of its bust (as in the mid-1980s/90s cycle).

The ‘elephant in the room’, ignored in conventional accounts of London’s current

economic health is monetary policy. The analogy is apposite in relation *both* to the vastness of resources being deployed almost invisibly, and in relation to (the ‘blind men’s’) puzzlement, as to quite what its ‘unconventional’ elements actually mean for processes in the ‘real economy’ - including those in/around the central London financial institutions which are in its front line. But, if not simply passed over to shareholders or rent-earning senior employees, large subsidies to the investing arms of banks must, add substantial employment to their home bases. And similarly, large injections of liquidity which go into high risk opportunities abroad should be expected to have their main UK impacts in the places that handle/enable these transactions – and can satisfy the sophisticated tastes of their stakeholders.

Central London’s relatively strong employment performance ever since the onset of the crisis might be read, as reflecting the onset of some new, durable boost to the city’s competitive advantage, at just the point when one of its weaknesses had been exposed. *Or*, it might instead be seen as the outcome of two distinct, shorter term developments, one effectively damping down the local impact of a major economic bust, and the other adding fuel to the firing up of another London-centred boom. In my view it is less misleading to recognise rather different stories playing out during the downswing and the upswing phases, though with financial support policies playing strong, if currently unquantifiable roles in each. In the first case, massive subsidies to the city’s major investment banks (surely) absorbed much of the momentum of the expected downswing, while subsequently two underplayed aspects of QE, its diversion into emerging markets and its revival of plutonomic consumption (also surely) gave a kick-start to an especially strong upswing for this city.

Both episodes should probably be seen as parts of two longer-running sagas. One of these, outlined by Haldane (2015) characterises the period covered by this paper in terms of an international ‘crisis trilogy’, with the Anglo-Saxon crisis, followed by a Euro-zone one, and then an emerging market one, nearing its climax now as the slug of global liquidity rotating through each setting heads away from these markets. London would (with New York) have been a major actor/character in early acts of the first and third of

these ‘plays’, escaping its come-uppance in the first with one dramatic device (‘too big and connected to fail’) that the authors say they have now ruled out, and a second (QE) which unexpectedly set up the plot for the third. What happens to it next is no clearer than at the close of the Anglo-Saxon play.

The other saga is the more open-ended life story of the speculative and volatile character that is the modern London economy. These traits are in many ways productive, reflecting the intersecting dynamics of pioneering activities in a diverse and complex agglomeration, with strong external connections. There is also a less productive tendency, however, to focus more on the shifting valuations of existing assets and profitable ways of exploiting these, than on the creation of new ones. Looking back on London’s successful weathering of almost a decade since the subprime bubble burst, from the viewpoint of its current boom, the speculation that supports it seems to have much more to do with the values of overseas assets, the lifestyles these can support, and the reliability of the state as an underwriter, than with much obvious enhancement of the city’s competitive advantage, dynamism and productivity.

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NOTES

¹ The UK economy was actually supposed to be on such a path between 2001 and 2007, with constant near-full employment, but consumption growth supported by an increasingly unsustainable level of personal debt.

² Though in functional terms the 'London' economy involves a much wider metropolitan area, the regional statistics used here all relate just to the administrative area of 'Greater London'.

³ In the case of unemployment (as distinct from employment) trends the patterns are rather different, since recessions also impact on regional labour supply, via a blunting of mobility, thus leading to consistently larger unemployment swings in regions of long term employment decline (Gordon, 1985).

⁴ Cyclical, or cyclical sensitivity, as used here, relates to the elasticity of regional employment swings relative to those in the national total.

⁵ If still less so than in construction, and apparently being matched by a (disappearing) mining/quarrying sector.

⁶ Camden, Hackney, Tower Hamlets and Westminster.

⁷ See Appendix Table 1.

⁸ See Appendix Figure 1a.

⁹ At the aggregate level, for which they are less suited than the LFS, these data show a more jagged version of the same basic pattern of change through these years (see graphs and tables in the Appendix).

¹⁰ This area, defined on a ward basis, includes the whole of the City plus about half of

Camden, Hackney, Islington, Tower Hamlets and Westminster, with a small part of Southwark (and Lambeth). It includes 54 wards in all, stretching from Knightsbridge in the west to Dalston in the north, the Elephant and Castle in the south and Mile End in the east (with Canary Wharf/Isle of Dogs as an appendage); - see map in Appendix.

¹¹ The numbers are rough, both because of judgements about where cluster boundaries should be drawn (e.g. in relation to sub-sectors with recorded declines) and issues about the reliability and consistency of the data series (here depending primarily on the employer-based ABI/BRES).

¹² The range cited here relates to the significance of self-employment and agency employment in the construction industry; self-employment from the worker-based LFS has been added here to ABI/BRES employee figures, but LFS estimates also imply substantially larger growth in the sector's employees, which the ABI/BRES may have attributed to the 'employment agency' sector.

¹³ The focus here is on the downturn phase, since this is the period when (central) London's favourable performance is most unexpected. Long term trends are represented here by 1990 Q1-2008 Q3 rates of change, and the two downturns by 1990 Q1 – 1993 Q1 and 2008 Q3 –2010 Q3.

¹⁴ Early job losses in manufacturing seem to have been checked by the substantial 2008/9 depreciation in the exchange rate, after which overall UK manufacturing employment actually stabilised, with a break from its long term downward trend.

¹⁵ Two other relevant points are that: the hoarding argument cannot explain actual job increases, such as occurred in central London; and that while job losses across the

country *were* surprisingly limited in this recession that was true across a wide range of jobs, not just the most skilled, possibly because depressed wage levels made labour-intensive methods more economic (HMT, 2015, Annex A).

¹⁶ BTA (2001) estimates for the sector are 3 times those for overall exports, whereas those for other services tend to be below average (Kamath and Paul, 2011).

¹⁷ Speakers at a Plutonomy Symposium in 2006 noted 3 relevant (social) desires among those buying luxury goods - to show off, to explore, and to acquire an expertise to be asked about – and that the ultra-rich tend to be very global, not part of a specific geography, but ‘hanging out in plutonomy destinations (like London) with fellow plutonomists’ (Kapur et al., 2006b).

¹⁸ The main exception being the (social) housing element of Olympics construction.

¹⁹ HM Treasury *Public Spending Statistics*, releases Oct. 2012 and October 2013. Her Majesty’s Treasury (‘the Treasury’) is the UK’s finance ministry.

²⁰ On Labour Force Survey estimates which relate to places of work as reported by individuals, rather than the office address of an employer or agency.

²¹ Including public administration plus educational, health and social services. Some of which will actually be privately marketed, or involve private contractors to public institutions

²² It is, of course, possible that some of this growth is not genuine, but a statistical illusion, reflecting operational delays in recognising head office establishments. But inspection of the location and timing of various recorded additions does not suggest a simple reclassification out of some other activity.

²³ This base rate, independently set by the UK's central bank, the Bank of England ('the Bank'), relates to the interest it charges for loans to commercial banks – the discount rate in US terms.

²⁴ According to annual reports to Parliament from the Comptroller and Auditor General on *Maintaining Financial Stability across the UK's Banking System*.

²⁵ Koo actually reports that all four international instances of QE (in Japan, the US, UK and the Eurozone) showed 'drastic liquidity injections resulting in minimal increases in money supply and credit', in the context of 'balance sheet recession' in the national economies, with least sign of positive responses in the UK and Eurozone.

²⁶ This estimate is based on data from the *Annual Survey of Hours and Earnings*.

²⁷ For the US, Blinder and Zandi (2015) estimate that overall financial policies served to raise GDP levels in the trough of the recession by 6.2%, while at its strongest QE came to contribute 1.5%.

²⁸ Fisher (2010), picked up with more specific examples by a Bloomberg journalist (David Lynch: 'Bernanke's "Cheap Money" stimulus spurs corporate investment outside U.S.', *Nov 17, 2010*).

²⁹ Professor Phillip Haynes and Alan W. Kay. Kay argued that the Bank and Treasury had no idea where the benefit of the QE money went (just saying that actual money could not leave the sterling area), and referenced an article by Dr. Ros Altman noting this issue at the time when QE was first announced.

³⁰ As an example of the potential importance of such spillovers into small open economies, Haldane cites evidence that the UK economy might have been more

impacted by the US QE programme than its own. More speculatively, one might suggest that evidence from the same source (Weale and Wieladek, 2015) that the maximum impact response of an asset purchase shock on the home economy was about double in the US case as for the UK might reflect a greater leakage potential out of (as well as into) smaller, more open economies.

³¹ As also on Macau gambling and Malaysian property prices, for this is a global story about QE effects spilling beyond their country of origin.