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Devolution and economic growth
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Mark Wingham

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For more information about this publication, please contact:

GLA Economics

Tel 020 7983 4922

Email glaeconomics@london.gov.uk

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Executive summary

The London Finance Commission previously recommended the devolution of taxation and the control of resources to London in 2013¹. Having been recommissioned by the Mayor of London in 2016 to update their findings in light of new circumstances, the Commission reiterated this call in their interim findings published in October 2016². However, something that is still largely unknown is whether greater devolution can lead to improved economic performance. A previous review of the literature for the Commission's original work found that the evidence was largely mixed. There was little consensus on whether fiscal devolution is beneficial to economic growth or not. This means that the benefits of devolution are still largely unknown to date.

In light of this, this paper provides an update to the literature review. The literature review found inconsistent findings in terms of the impact of fiscal decentralisation in general on economic growth. However, some studies did find a positive link between economic growth and the subnational government's share of total government revenue (that is devolution where subnational government account for a significant share of total government revenue – either through direct tax raising or government grant). However, there still remains inconsistency in terms of the magnitude and strength of this relationship.

This paper also goes further than the literature review by presenting some rudimentary analysis looking at the link between devolution and economic performance in terms of growth and productivity. The analysis should be used with caution as the indicators used to measure devolution – the OECD Indices of Decentralisation – do not take into account any differences in the 'quality' of devolution. For example, while local government may have more expenditure responsibilities, there still may be central government guidelines as to how and where to do this spending. It should also be considered as being 'simple' in the sense that it simply looks at the correlation between two indicators without looking at the causation by, for example, accounting for any other influential variables. Overall, considering all these caveats and issues, the rudimentary analysis cannot provide further insight into the potential causal links between devolution and economic growth or productivity.

¹ London Finance Commission (2013). Raising the Capital, May 2013.

² London Finance Commission (2016). London Finance Commission 2: interim report, October 2016.

1 Introduction

GLA Economics is producing a series of research papers examining options for greater fiscal devolution in London to inform the second London Finance Commission (LFC2). The research examines a number of areas including council tax, stamp duty land tax and a possible new tourism levy, among others. As part of this wider project, this paper investigates the relationship between devolution and economic growth.

In May 2013, the LFC published its report arguing for greater fiscal independence for the capital in order to invest and cater for growth³. The report recommended that this could be achieved by relaxing restrictions on borrowing for capital investment within prudential rules and devolving certain revenue streams, including the full suite of property taxes. However, the Commission⁴ noted that:

“The body of existing academic evidence was inconclusive about the impact of devolving fiscal powers. There is no consistent and certain evidence that either centralised or, on the other hand, devolved models of government have measurable effects on economic growth.”

While there have been many studies, the previous literature review supporting the Commission found little consensus on whether fiscal devolution is beneficial to economic growth or not⁵. One explanation for this inconsistency was the difficulty in measuring and comparing the extent of decentralisation. In addition, there are many factors that can affect economic growth besides devolution, which meant that any link between growth and decentralisation becomes harder to detect.

Acknowledging these earlier findings, this paper presents an update of the literature on the impact of fiscal devolution. It also goes one step further by presenting some rudimentary analysis looking at the relationship between the level of devolution and economic growth, as well as productivity, for the UK and other OECD countries.

This paper continues by first presenting an overview of the new literature looking at the economic impact of devolution since the previous review. It then presents some rudimentary and basic analysis looking at this relationship, with the overall conclusions discussed in the final section.

³ London Finance Commission (2013). Raising the Capital, May 2013.

⁴ London Finance Commission (2013). Raising the Capital, May 2013, pg. 7.

⁵ London Finance Commission (2012). Initial literature review on fiscal devolution and economic growth, August 2012.

2 Updates to the literature

This chapter presents a quick review of literature that looks at the relationship between devolution and economic growth published since 2012. The literature was found using a Google Scholar search and a search within the Idox Information Service database to which the GLA subscribes. It should be noted that the included articles below do not represent the entirety of the literature in this area, but were judged to be the most significant articles available without conducting a more significant trawl.

Overall, these articles provide inconsistent findings in terms of the relationship between devolution and economic growth; similar to what the previous literature review found for the Commission in 2012. However, this could be reflective of the different types of decentralisation considered, such as whether subnational government has a large share of total government revenue or expenditure (see the next chapter for a description of the various types of decentralisation). If the different types of devolution are looked at individually, then there appeared to be more consensus that revenue decentralisation – that is, local government has a large share of total government revenue – is linked to economic growth. Nonetheless, there remains inconsistency between the studies in terms of the magnitude of this effect and the strength of this relationship.

Blöchliger, H (2013) ‘Decentralisation and economic growth – part 1: how fiscal federalism affects long-term development’

This paper looked at the potential effects of fiscal decentralisation on a set of economic indicators such as GDP, productivity and public investment for the OECD countries. The study was based on an augmented neoclassical growth model in which total economic output depends on physical and human capital, labour and total factor productivity. Control variables such as inflation and population were also included in this model, as well as indicators relating to decentralisation. Four devolution indicators were used and show the proportion of sub-central government to total government for spending, revenue, tax revenue and tax autonomy. Although discussed in greater detail in the next chapter, these indicators show the shares of local government revenue and expenditure in total government revenue or spending for example.

Overall, the author found that spending and revenue decentralisation to sub-central governments was positively, but weakly associated with economic activity. In contrast, tax autonomy – that is, subnational governments have some control over setting taxes or over the tax base – appeared to have little influence on economic activity but this could be due to the small sample.

The analysis suggested that the positive, but weak relationship between spending and revenue devolution with economic activity could be down to productivity and human capital improvements. For example, spending by local government resulted in improved educational outcomes which, in turn, led to higher productivity. In contrast, capital investment appeared to have little economic effect.

This paper can be found online here: <http://dx.doi.org/10.1787/5k4559gx1q8r-en>

Gemmel, N & Kneller, R & Sanz, I (2013) 'Fiscal decentralisation and economic growth: spending versus revenue decentralisation'

This paper looked at the impact of revenue and spending decentralisation on economic growth for 23 OECD countries between 1972 and 2005. The authors used an econometric model whereby the rate of economic growth was regressed with fiscal devolution indicators and control variables such as the investment rate and employment. Due to the model specification, the results related to marginal changes rather than levels.

The authors found that local governments that have a large share of total government revenue (i.e. revenue decentralisation) tended to have higher economic growth. In contrast, sub-central governments that have a large share of total governments spending (i.e. expenditure decentralisation) was generally associated with lower growth rates. They also argued that OECD countries generally had more control over spending rather than revenue. Therefore, if there was more revenue devolution, it could potentially improve growth rates as a whole.

This paper can be found online here: <http://dx.doi.org/10.1111/j.1465-7295.2012.00508.x>

Bartolini, D & Stossberg, S & Blöchliger, H (2016) 'Fiscal decentralisation and regional disparities'

This paper argued that fiscal devolution could lead to a more efficient provision of local services and more appropriate policies. However, the extent to which regions experience these benefits could vary and thus increase regional disparities. At a high level, the paper discussed two sides to the argument of the regional impact of fiscal devolution. Supporters argued that decentralisation could lead to more efficiency gains and growth opportunities for 'lagging' regions that are further away from the efficiency frontier (among others). Instead, sceptics argued that the playing field was uneven in terms of institutional capacity and socioeconomic endowment. This meant that only well-endowed regions would benefit from devolution for instance. The paper provides some empirical findings on this debate.

The authors used an econometric model to test the relationship of regional disparities with fiscal devolution and a number of control variables including population and urbanisation for 30 OECD countries between 1995 and 2011. Their findings suggested that tax revenue and revenue decentralisation tended to reduce regional disparities and this seemed to be driven by the power to raise tax revenue itself. Moreover, this effect appeared stronger at the extremes of the distribution (i.e. for the richest and poorest areas).

This paper can be found online here: <http://dx.doi.org/10.1787/5jlpq7v3j237-en>

3 Rudimentary comparisons of devolution and economic performance

Complementary to the literature review, this chapter presents some rudimentary comparisons between the level of fiscal devolution and economic performance, which here includes GDP growth and productivity. The analysis is conducted at the national level meaning that no consideration has been given to potentially different regional trends.

The principle set of data used in these comparisons are from the OECD Fiscal Decentralisation database⁶. This includes three indicators of devolution and covers 34 OECD countries, with some series starting from 1970. Specifically, the decentralisation indicators included in the database and, thus, used in this analysis are⁷:

- Expenditure decentralisation
This is effectively the devolution of spending responsibilities to local government. As such, it is calculated as the ratio of local to total government (local and central) expenditure. It does not necessarily mean that local government has control over how and where to undertake the expenditure as this could be within central government guidelines and statutory responsibilities – it just relates to the level at which the expenditure occurs. For the UK, the EU Commission reported that expenditure devolution was greater for the environment protection, education, recreation, culture and religion spending areas in 2009⁸. More specifically, local government in the UK was responsible for more than half of total government spending (which also includes central government) on investment and compensation of employees in 2010.
- Revenue decentralisation
This is defined as the revenues collected by, or transferred to, subnational government as a proportion of total government revenue. Generally, subnational governments are reliant on two main sources of funding: (i) taxes which can be either set at the local level or assigned from the central government and (ii) grants from central government. Other sources of funding for local government include service fees (i.e. parking fees), property income and other subsidies.
- Tax revenue decentralisation
This is a sub-set of revenue decentralisation in that it only looks at the tax revenue collected by local government as a share of total tax take. It does not include transfers from central government, such as grants, which may themselves be financed by taxation. Also, it does not necessarily mean that local government has control over the tax base or the setting of the tax (instead this is tax autonomy, discussed below).

There is also an indicator of tax autonomy – the ratio of taxes of which local government has some base or rate-setting autonomy to total government revenue (so, an advanced version of tax revenue decentralisation). However, this information is produced at irregular periods and is not necessarily available for all countries.

⁶ <https://www.oecd.org/ctp/federalism/oecdiscaldecentralisationdatabase.htm>

⁷ See box 2 of Bartolini, D, Strossberg, S & Blöchliger, H (2016) for more information about the various indicators.

⁸ http://ec.europa.eu/economy_finance/events/2012/2012-11-27-workshop/pdf/fiscal_decentralisation_en.pdf

Although these indicators provide a simple method for comparing different levels of devolution across countries, they have been criticised for not taking into account the true fiscal discretion that local government may have in practice⁹. For example, local government may be restricted in how much they can raise (i.e. centralised limits) and where they can spend (i.e. ring-fenced funding). Although some studies have attempted to capture the decision-making power of local government, difficulties in defining and measuring this means that this information is patchy¹⁰. Therefore, while these indicators may not necessarily reflect the 'quality' of devolution in reality, they have been used in this analysis as they are some of the most comprehensive datasets. Nonetheless, some caution should be used when using these 'simple' indicators.

Acknowledging the above, the following section looks at the links between devolution with economic growth and productivity in turn below.

Economic growth

In this section, the level of decentralisation is compared with the rates of economic growth. The latter is defined as the annual rate of real GDP growth to more accurately show the underlying output trend. Moreover, this information was sourced from the OECD for consistency purposes¹¹.

Figure 1 shows these simple correlations¹² for the four indices of decentralisation for the UK between 1990 and 2014. Therefore, each point represents a single year for the UK. Initially, there appears to be no strong link between devolution and real GDP growth as indicated by correlation estimates close to zero. This is particularly true for expenditure decentralisation – that is, looking at the share of total government spending which local government accounts for – which has a large spread of observations. It could be the case that the correlations are affected by anomalies – points that are far away from the trend – as shown in red. If these observations were removed, then there appears to be a positive, but weak relationship between growth and both revenue and tax revenue decentralisation.

⁹ Blöchliger, H (2013). Measuring decentralisation: the OECD fiscal decentralisation database, *Measuring Fiscal Decentralisation: concepts and policies*, Chapter 1, OECD Publishing: Paris.

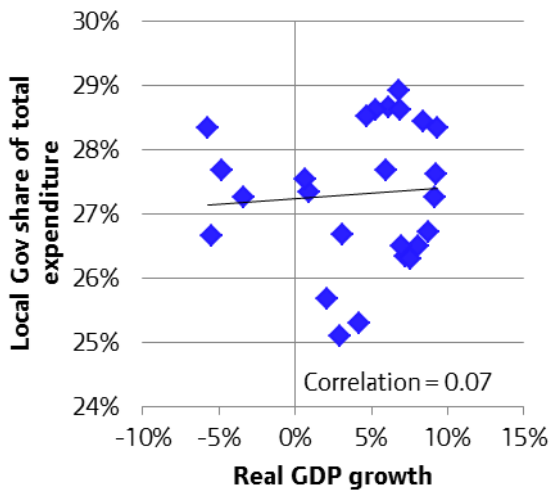
¹⁰ Kim, J (2013). Measurement of decentralisation: how should we categorise tax sharing, *Measuring Fiscal Decentralisation: concepts and policies*, Chapter 3, OECD Publishing: Paris.

¹¹ http://www.oecd-ilibrary.org/economics/national-accounts-at-a-glance-2015_na_glance-2015-en

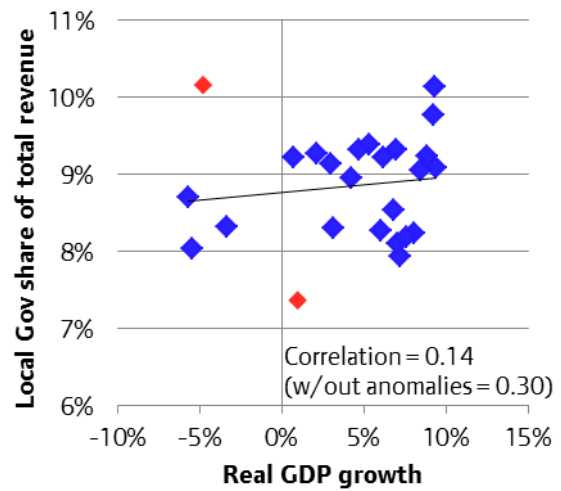
¹² A correlation shows the strength of the relationship between two variables. An estimate of +1 suggests that there is a perfect positive relationship between the two variables, whereas an estimate of -1 indicates a perfect negative relationship. Meanwhile, a correlation coefficient of 0 indicates that there is no relationship at all.

Figure 1: Correlation between indices of decentralisation and real GDP growth for the UK, 1990 to 2014

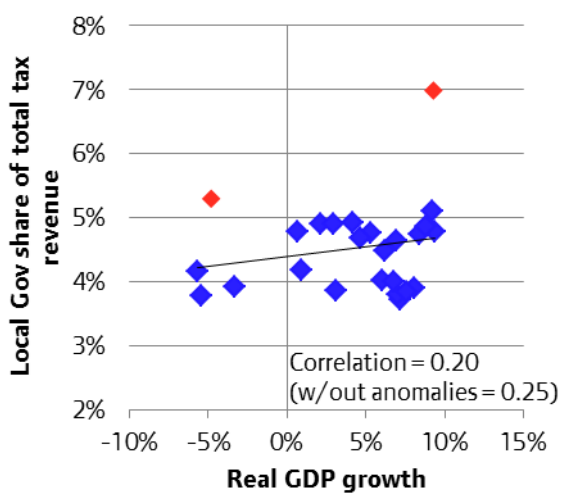
a) Expenditure decentralisation



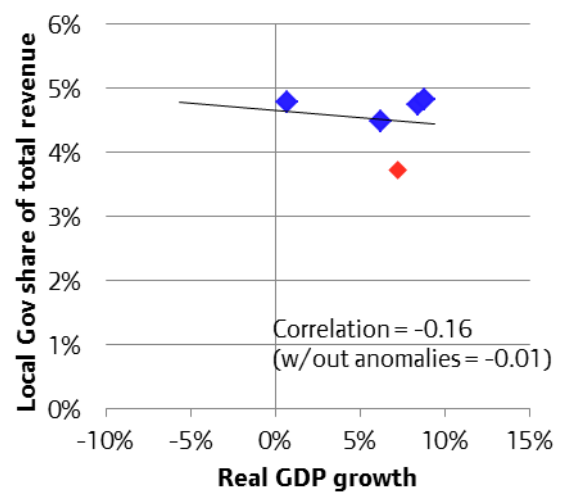
b) Revenue decentralisation



c) Tax revenue decentralisation



d) Tax autonomy (selected years)



Note: potential anomalies are shown in red. Source: OECD Real GDP, OECD Fiscal decentralisation database

Even though there could be a positive, yet weak link between some types of devolution and economic growth, these very simple comparisons do not provide any insight into whether devolution *caused* growth. That is, whether devolution was the reason for the changes in economic growth or not. For example, it could be reasonable to expect devolution to have a lagged effect on economic growth, which would not be captured by these simple correlations. Given this, one method for identifying causation is by trying to account for the other macroeconomic variables that could also have an influence on growth. For example, employment, business investment and household consumption could explain a larger part of economic growth than devolution. Additionally, by accounting for these additional variables, the attributable effect of decentralisation on economic growth could also become more apparent.

Assuming a very simple economy where the only factors that affect economic growth is household consumption and industrial output – though, in reality, there are a lot more indicators – real GDP growth is regressed with these variables and the decentralisation

indicators. Only one decentralisation indicator is used in a regression at a time to reduce the chances of collinearity – that is, reduce the chances that some of the explanatory variables are correlated with each other. Acknowledging these caveats, the econometric results are shown in Table 1 and suggest that there is no statistically significant relationship between devolution and economic growth in the UK. This can be seen by the regression estimate associated with the decentralisation indicator not being statistically significant (represented by the asterisks). However, this finding should be read alongside the caveats such as whether the econometric model has been correctly specified and the quality of the decentralisation indicators.

Table 1: Regression results between devolution and economic growth with control variables for the UK, 1996 to 2014

Model	1 – baseline	2 – Expenditure devolution	3 – Revenue devolution	4 – Tax revenue devolution
Dependent variable Real GDP growth				
Independent variables				
Intercept	0.05 ***	0.05 ***	0.05 ***	0.05 ***
Real household consumption growth	-0.99 **	-1.10 **	-0.95 *	-1.02 *
Real industrial output growth	1.57 ***	1.57 ***	1.49 ***	1.62 **
Annual change in expenditure devolution		0.89		
Annual change in revenue devolution			-0.73	
Annual change in tax revenue devolution				0.74
Model statistics				
Adjusted R ²	0.43	0.40	0.39	0.39
Standard error	0.04	0.04	0.04	0.04
Observations	19	19	19	19

Note: statistical significance of independent variables is shown next to the model estimates. Significance at 1 per cent is shown by ***, 5 per cent by **, and 10 per cent by *. Source: GLA Economics

An alternative approach is to look more widely at the impact of devolution on economic growth for countries in addition to the UK. The OECD decentralisation indices are available for 34 countries including the US, Germany and Denmark which are, consequently, all included in this analysis. It should be noted, however, that a simple comparison of level of devolution and economic growth could be misleading given that each country has inherently different economies and government structures. For example, the average rate of real GDP growth over the past 10 years was 1.9 per cent in Canada versus 3.7 per cent in South Korea. Similarly, the US is a lot more decentralised than the UK partly linked to the US having three main layers of government (national, state and local) in comparison with two in the UK (national and local). Consequently, these inherent differences are accounted for by introducing dummy variables into the modelling, specifically for the various countries and time periods. As such, this very simple econometric model looks at the relative change in growth associated with a relative change in decentralisation.

Table 2 shows the results of the regressions for the various indicators of devolution. The focus here is on the adjusted R² which shows the relative ‘fit’ of the independent variables in explaining real GDP growth. In essence, the adjusted R² is similar to the correlation if there was

only one independent variable¹³. Overall, the models show that there is virtually no relationship between devolution and real GDP growth.

Table 2: Regression results between devolution and economic growth with control variables for the OECD countries (time period varies)

Model	1 – baseline	2 – Expenditure devolution	3 – Revenue devolution	4 – Tax revenue devolution
Dependent variable				
Real GDP growth				
Independent variables				
Intercept	0.61 ***	1.49 ***	1.56 ***	0.59 ***
Country ID (dummy)	0.00 *	0.00	0.00	0.00 *
Year (dummy)	0.00 ***	0.00 ***	0.00 ***	0.00 ***
Annual change in expenditure devolution		0.18 **		
Annual change in revenue devolution			-0.33 **	
Annual change in tax revenue devolution				-0.25 ***
Model statistics				
Adjusted R ²	0.01	0.04	0.04	0.02
Standard error	0.03	0.03	0.03	0.03
Observations	1,143	574	574	1,138

Note: statistical significance of independent variables is shown next to the model estimates. Significance at 1 per cent is shown by ***, 5 per cent by **, and 10 per cent by *. Source: GLA Economics

Productivity

Following a similar approach to the above, this section looks at the relationship between devolution and productivity. Productivity is an important indicator of economic performance by measuring the efficiency of converting inputs into outputs. There are three main productivity indicators, which are:

- Labour productivity
This is one of the most widely used measures of productivity and shows the amount of output generated by a unit of labour such as the number of jobs or hours worked.
- Capital productivity
Similarly to labour productivity, this shows the amount of output generated by a unit of capital. It is usual practice to look at the flow of capital rather than the stock to better illustrate the change and can include machinery, equipment and buildings.
- Multi of total factor productivity
This is the change in output attributable to several types of inputs and, as such, is viewed as the most complete measure of productivity. Often multifactor productivity is measured by looking at the residual – that is, the change in output that is not attributed to both labour and capital – and represents the efficiency of using inputs in production. Things like

¹³ If a simple comparison was conducted for level of decentralisation and real GDP growth using data for all OECD countries and time periods, then these correlations would still indicate a very weak relationship. For example, the correlations were 0.10 for expenditure decentralisation, -0.08 for revenue decentralisation, and -0.10 for tax revenue decentralisation.

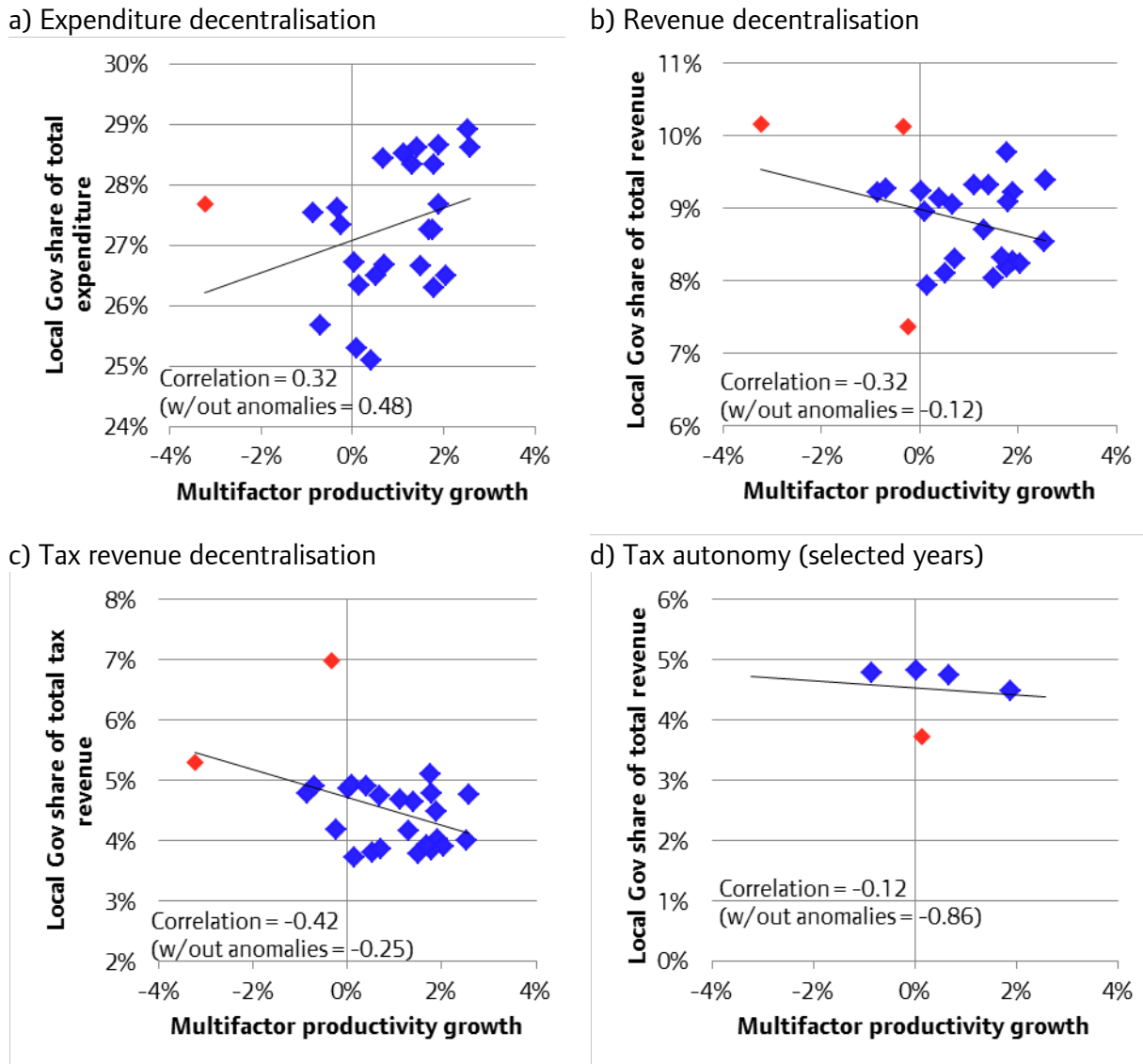
economies of scale and change in management or the organisation can all influence multifactor productivity.

In this analysis, both multifactor productivity and labour productivity (output per hour worked) is used. This information comes from the OECD Productivity Database to ensure consistency with the decentralisation indicators¹⁴. As such, Figure 2 shows the correlations between multifactor productivity growth and the various indices of decentralisation for the UK between 1990 and 2014, while Figure 3 shows the correlations using output per hour worked in real terms.

For multifactor productivity, there is a positive link with expenditure decentralisation. Although the strength of this correlation is stronger than with economic growth, it remains relatively weak at 0.32 rising to 0.48 if the anomalies are excluded. In contrast, there are negative, weak relationships for revenue and tax revenue decentralisation. Meanwhile, the lack of observations makes it hard to draw any firm conclusions for tax autonomy. As noted earlier, these simple correlations do not provide any indication as to the causation. Therefore, there is still some uncertainty as to whether devolution leads to an improvement in productivity.

¹⁴ <http://www.oecd.org/std/productivity-stats/>

Figure 2: Correlation between indices of decentralisation and multifactor productivity growth for the UK, 1990 to 2014

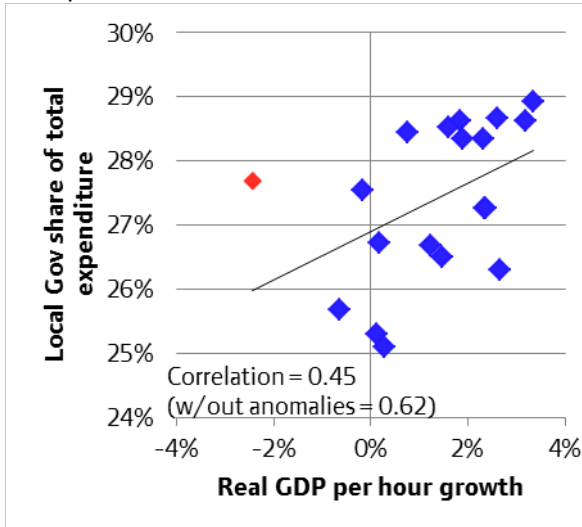


Note: potential anomalies are shown in red. Source: OECD Multifactor Productivity, OECD Fiscal decentralisation database

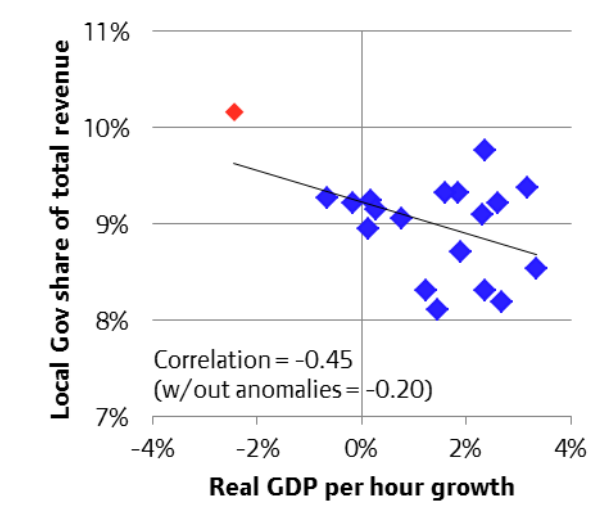
The correlations are generally stronger if looking at labour productivity, though this in part could be attributed to a different time period (and, thus, a different number of observations) being used. There is a positive, but not necessarily causal, relationship between output per job and expenditure decentralisation (0.45) which is even stronger when the potential anomalies are removed (0.62). However, there are negative correlations for revenue and tax revenue decentralisation. Like above, the small number of observations means that it is not possible to infer the relationship for tax autonomy.

Figure 3: Correlation between indices of decentralisation and labour productivity growth for the UK, 1996 to 2014

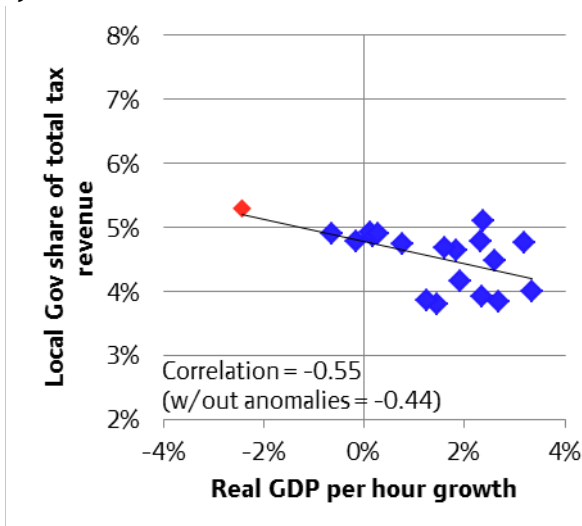
a) Expenditure decentralisation



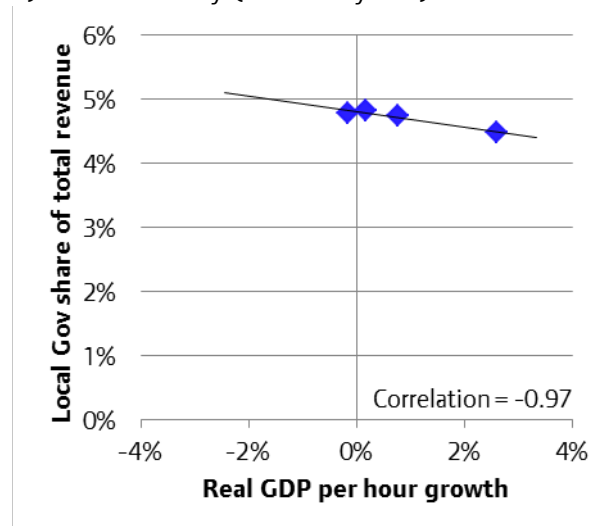
b) Revenue decentralisation



c) Tax revenue decentralisation



d) Tax autonomy (selected years)



Note: potential anomalies are shown in red. Source: OECD Growth in Labour Productivity, OECD Fiscal decentralisation database

4 Conclusions

This paper presented an update to the literature that looks at the relationship, if any, between devolution and economic growth. The previous literature review generally found that there was inconsistent evidence as to whether devolution is beneficial to growth or not. This in part could be due to the difficulty in measuring devolution and the fact that economic growth is affected by many other factors besides decentralisation.

The new literature discussed in this paper continues to find conflicting evidence on the relationship between devolution and growth. However, several studies seem to suggest that this could be due to the type of decentralisation itself. For example, at a high-level, there appears to be more consensus that there is a positive link between economic growth and revenue decentralisation – that is, subnational government revenue accounts for a higher proportion of total government revenue. However, the magnitude of this effect and the strength of this relationship are disputed. Similarly, findings are less consistent for other types of devolution such as expenditure decentralisation where local government has more spending responsibilities.

In addition to the updated literature review, this paper also presented some rudimentary comparisons between devolution and economic performance for the UK and other OECD countries. However, this simple analysis is subject to a number of caveats. For example, the decentralisation indicators used do not necessarily represent the 'quality' of devolution in reality. Given the caveats and issues, it remains unclear as to the causal link between devolution and economic growth or productivity.

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GLAECONOMICS

Greater London Authority
City Hall
The Queens Walk
London SE1 2AA

Tel 020 7983 4922
Fax 020 7983 4674
Minicom 020 7983 4000
Email glaeconomics@london.gov.uk

<http://www.london.gov.uk/gla-economics-publications>

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