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On the right track?

A consideration of the potential local and socio-economic impacts of the proposed Cardiff Capital Region Metro

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About the author:

Dr Mark Lang is a consultant with expertise in poverty eradication and local economics. In 2014 he was co-author of the Tredegar Deep Place Study and continues to specialise in whole place sustainability. He has previously worked for the Centre for Regeneration Excellence Wales and the Centre for Local Economic Strategies. He is an Honorary University Associate at the Sustainable Places Research Institute, Cardiff University.

Foreword

The South East Wales Metro is a project that has sparked much interest across Cardiff and the wider region. It is a concept that has been almost universally welcomed, with much said about the opportunity that it provides.

Hundreds of millions of pounds have been ear-marked for the Metro and several maps of the proposed network have been produced. It seems that everyone I have spoken to in the business community wants the Metro scheme to succeed, and we at FSB Wales are no exception to that.

However, in all the excitement about the possibilities of the scheme, there is a real danger that we pay too little regard to those outcomes that we want it to produce, and place too little emphasis on learning from examples elsewhere regarding how we can maximise the benefits such infrastructure investment might bring.

At FSB Wales we are particularly concerned that any benefits from the investment in Metro infrastructure should not just be felt in Cardiff, but also within the wider communities of South East Wales. We want to see the Metro scheme used as a catalyst for the regeneration of our Valleys communities, rather than just offering a quick journey into the city centre.

With that in mind we asked Dr Mark Lang, one of Wales' foremost researchers on the subject of regeneration and local economies, to examine the Metro project, and to look at what lessons can be learned from similar projects that have been undertaken elsewhere.

I hope that all those involved in the Metro project will take the time to read this report and take on board Dr Lang's core recommendations.

Hopefully this work will contribute not only to the general debate around the Metro project, but also to the final shaping of the scheme as the project progresses.

The Metro scheme is a huge investment for South East Wales, and we all need to go into this project being fully appraised of the pitfalls as well as the opportunities.

I very much hope that this report will lead to more detailed consideration of what goals we want the Metro to achieve, and how it can meet those goals. With so much at stake we need to do all we can to maximise the opportunities the Metro offers, so that communities across South East Wales have the best chance of a more prosperous future.

Janet Jones, FSB Wales Policy Unit Chair

Introduction

This paper has been prepared with the support of FSB Wales to consider the potential local economic impacts of the Cardiff Capital Region Metro. The Welsh and UK Governments and the ten local authorities in South East Wales have now agreed to support the proposal via the Cardiff Capital Region City Deal (HM Treasury, 2016). This paper considers the broader economic context and debates within which the Metro proposals fall, the international evidence around the impact of large-scale transport investments, the socio-economic context in South East Wales, as well as the arguments proposed in support of the Metro. The paper offers some tentative analysis of the case for the Metro investment, and seeks to raise a series of discussion points rather than prescriptive conclusions. These points relate to the economic rationale; the lack of international evidence to support the view that transport investment leads to positive economic or social outcomes; and, the lack of a detailed spatial understanding of South East Wales against which to plan an integrated transport network. The key issues are as follows:

- Many of the arguments and justification put forward in support of the public investment for the Metro appear to derive from a belief that it will make the Cardiff city region more ‘competitive’, and therefore more prosperous. Debate and discussion about the Metro has so far failed to question the ‘collaborate to compete’ perspective on local economic development, nor to really consider the alternatives such as foundational economics. Should the Metro investment proceed, its manifestation is therefore likely to follow the priorities of its dominant rationale and it may miss important opportunities to grow local and distributed economies across South East Wales. Major public investment decisions could be made as a result of limited debate, involving a relatively small elite with a particular perspective on the future economic model of South East Wales, and with only tokenistic ‘consultation’ exercises.

- There is little international evidence concerning the non-transport benefits associated with transport infrastructure investments, and there is a real lack of robust methodological approaches to establish a link between the investment, or planned investment, and social or economic outcomes. Despite this, much of the justification for the Metro proposals appears to be based on the likely economic benefit to the Cardiff city region. The spatial context appears to be critical to determine who benefits from investment, yet there has been little spatial analysis forthcoming, and what analysis has been undertaken has some major shortcomings. The question of who will benefit from the Metro investment – centre or periphery – remains unanswered. Metro hubs appear to offer a potential aid to hyper-local economic uplift, but the context is critical, and internationally, such transport hubs have had negative and indifferent, as well as positive effects.

- There is very little evidence available on the spatial interconnectedness of places in South East Wales. Without this understanding it is unclear how a truly effective and integrated transport network can be created, as it is not possible to conclusively say what the network is seeking to connect. If delivered inaccurately, the network could cut across existing local economies and weaken them even further. The Metro consortium in its reports and recent Welsh Government statements have indicated that they believe future economic opportunity for South East Wales lies in Cardiff. Without spatial understanding, however, it is not possible to determine whether the city of Cardiff will benefit at the expense of other towns and communities across South East Wales, boost local locations outside of the city, or simply have no impact at all.

The economic context for the Cardiff Capital Region Metro

In the period since the Global Financial Crisis 2007 – 08 there has been a growing interest in inequalities of wealth (see for example Dorling, 2015 and Atkinson, 2015). In what Manuel Castells et. al. (2012) referred to as the 'aftermath' of this crisis, more and more research has been published to demonstrate that economic and social outcomes are not virtuous enough. At the pinnacle of this research is Thomas Piketty's (2014) 'Capital in the 21st Century', which amasses a definitive body of evidence from Europe and the US that exposes these inequalities in their historical context since the eighteenth century. Piketty shows that, apart from the period between 1930 and 1975, the rate of return on financial capital has been greater than the rate of economic growth over the long term, and that the result of this is an increasing concentration of wealth. This, of course, undermines the 'trickle down' effect arguments, which gained traction during the 1980s and justified lower taxes on the basis that wealth would trickle down to the poor. Set against this there has been a background of lower real wages, more precarious employment and a significant reduction of public expenditure. The Joseph Rowntree Foundation (Unwin, 2013) has referred to this assemblance of forces as a 'perfect storm'. For those communities located in the South Wales Valleys, and particularly towards the Heads of the Valleys, these trends have been particularly resonant. Despite some initial speculation that the Great Financial Crisis might destabilise the hegemony of neo-liberalism, which has dominated economic decision-making since the demise of Keynesianism at the end of the 1970s, it quickly became clear that the political consensus about needing a response that would preserve as far as possible the economic status quo was too strong to permit fundamental change.

The dominant approach to local economic development is competitive, and the mantra is that cities, or places, must 'collaborate to compete' (Noone, 2007). The doyen of the narrative of competitive success is Richard Florida, who has argued that those cities with the highest proportions of 'creative classes' were likely to be the most competitive internationally, as 'in the creative economy, regional advantage

comes to places that can quickly mobilise the talent, resources, and capabilities required to turn innovations into new business ideas and commercial products' (Engelen et. al., 2016). Florida (2005) claims that cities should seek to attract the creative classes by focusing their economic development resources on projects such as sports stadiums, iconic buildings, and shopping centres.
Florida's arguments sit alongside those such as Sassen (1992) and more recently Glaeser (2012), who has argued that globally competitive 'dense' cities are also the model to address the low carbon economy, particularly as he believes 'ideas spread more easily in dense places'. Glaeser takes a tougher line than Florida, in as much as he argues that government support for struggling places and failing industries should be withdrawn. Overman likewise argues that regional aid has not worked and should be removed (Engelen et. al., 2016). Unified by a call to remove the state and let places compete, these arguments are consistent with the agglomeration thesis critical to the city region proposals.

Ironically, many of those who continue to advocate trickle-down economics nevertheless call for significant public sector financial support to create the conditions for the competitive success of cities. This goes beyond Florida's advocacy of pump-priming the trappings of the creative classes, and includes major infrastructure projects and public sector subsidies for, for example, rail transport. Nowhere has this been more apparent in the UK context than in London and the South East, which have seen the heaviest concentrations of public sector investment, including the £10bn Olympic Park, £4bn Terminal 5 at Heathrow, the £5bn Channel Tunnel Rail Link, as well as the Crossrail project. Massey (2010) has termed the justifications put forward by those who advocate greater concentration of public sector investment in London and the South East as 'trickle-down geography'. The concentration of public resources in those areas that are more likely to be internationally competitive, it is argued, will lead to greater national wealth, which can subsequently be spread across the country. To a lesser extent this argument has been used to justify major public expenditure in other cities across the UK, including Cardiff. This argument seems to ignore the fact that much of the wealth created is in fact the result of national investment in particular places like London. There is, however, an even more significant inconvenient truth: experience has shown that the competitive cities and agglomeration economics approaches have not to date addressed the fundamental problem of inequalities; nor do they appear to offer a solution to disadvantaged locations such as those in the South Wales Valleys.

Over the last 30 years the level of economic and social exclusion has risen significantly, and in the UK 33 percent of children now live in poverty, that is in families earning below 60 percent of the national average. Whereas until recently labour market exclusion was the largest cause of poverty in the UK, 'in-work' poverty has now become the primary cause of poverty across the UK, with 27 percent of partially-working families defined as low income families (JRF, 2013). Despite the language of the welfare reform agenda, economic and social disadvantage cannot be explained simply by the alleged personal failings of the local population. Adamson (2008) argued that inequalities of outcome were more the result of the existence of systemic mechanisms of social exclusion that prevent that population engaging with society as a whole as fully productive and active citizens. This can occur as much in poorer inner-city areas, or in peripheries such as the South Wales Valleys. Adamson argues that there is a complex process of ‘exclusion’, involving high rates of economic inactivity caused by the decline of traditional key patterns of employment, high rate of under and unemployment, low educational attainment, employment skills deficits, poor health behaviours and shortened healthy-life and life expectancy.

Alternative approaches to economic development

Set against the background of competitive approaches to economic development, there has been a more recent attempt to ‘reimagine’ local economic development on a new basis. Quite apart from seeking to undermine capitalism, these new approaches actually seek to harness the creative power of businesses at the local level. They call for a different approach to state intervention than has tended to dominate economic development discourse to date. Rather than support calls for the concentration of public investment in capital projects or direct subsidies to attract inward investment or the creative classes, these new approaches place a much bigger emphasis on ‘foundational economics’. Work undertaken by CRESC (Centre for Research on Socio-Cultural Change) has been at the forefront of this new type of approach (Bowman, 2013). It is argued that far from the state withdrawing and places competing, the free market does not in fact exist. As well as capital investment and investment grant support identified above, the state provides significant business subsidies in other ways, such as transport subsidies, benefits for low wage earners, high property prices and resulting need for housing benefit, and in keeping tax rates low as an attraction to invest. The foundation economy was recently recognised within the LSKIP (Learning, Skills and Innovation Partnership) for South East Wales Employment and Skills Report (LSKIP, 2015) as a critical part of the economy of South East Wales. Advocates of the new approach to local economic development simply call for existing state intervention in the market, which has not reversed growing economic and social disadvantage, to be targeted differently.

CRESC have suggested that rather than attempt to redistribute via a return to significantly higher levels of taxation, which are unlikely to garner wider support, we should seek to reorganise our economy. They argue for the ‘grounded city’, which places an emphasis on the distribution of mundane good and services essential for civilised life, rather than the pursuit of growth only in certain high tech industries (Bowman, 2014). The grounded city is one that structures social innovation in a way that meets the needs of the local circumstances. The grounded city is a counterintuitive response to globalisation. This approach has its roots in the arguments for public spend on urban public goods in the 1970s by human geographers and urban theorists such as Castells, Harvey and Lefebvre, but its resonance is more apparent and its articulation has been significantly strengthened as a result of the increasing inequalities of the period since then. There are detractors to this alternative approach to place, such as Henry Overman (see Gibbons et. al., 2013), who argue that spending on regional economic aid has not worked and should be reduced or stopped altogether. It could be argued, however, that whilst it is clear that regional economic aid has not overcome inequalities, regional aid should be spent differently and not removed altogether which would leave regions like South East Wales to become entirely reliant on trickle-down geography. Economists tend not only to frame economic activity within certain sectors, they have, since the 1980s placed significantly more weight on financial capital, as opposed to other forms of capital, such as environmental, human and social. Foundational economics is an argument to put people back at the heart of the economy.

Critical to foundational economics is an understanding of ‘place’, and the intricacies of policy-making within place. Clearly rejected is the centrality of place competition, but this does not mean a rejection of the role of place, indeed it is a prerequisite. Understanding spatial contexts is therefore critical to the local development of economic and social policy-making. Pierce et. al. (2008) argue that place-making is the result of socio-spatial relationships, and Cowell and Owens (1998), through an examination of the connections between uneven development and sustainable development, suggest that the spatial dynamic of uneven development is an integral component of these tensions. Their analysis shows that spatial differences in political culture, environmental values and economic history shape the interpretations of sustainability in different localities. This therefore suggests that economic and other policy decisions will be framed and governed by place. Granas (2012) takes this analysis further, illuminating the social construction of place and place attitudes through the experiences of the people who live there, which is an absolutely critical element of understanding any place. What Granas fails to do is locate the lived experience of place within wider intra- and extra-place analysis of social, political, and economic power constructions and place ‘dependencies’. Lindahl and Baker (2013) take the analysis of the role of place significantly further by considering how actors’ different perceptions of place shape policy cleavages and influence the scope for their resolution. They ask two questions: how are actors’ policy preferences and political activities informed by their perceptions of place? And, whose place perceptions and policy preferences are reflected in policy outcomes? They seek to integrate concerns for place with understandings of policy-making and policy influence. In so doing, Lindahl and Baker make the critically important point that influential and economically ‘important’ sectors and actors have a significant ability to influence policy preferences, and that many local actors lack the means to articulate their policy preferences.

There are a number of points of particular salience that may be highlighted. Firstly, the neo-liberal paradigm, which has presided over the ever-increasing gap between the richest and poorest sections of society, appears to have successfully reasserted itself following the Great Financial Crisis of 2007-2008. Economic discourse continues to be dominated by neo-classical economic predispositions, which tends to ignore the spatial polarisation of wealth. Secondly, where place is considered by economists and policy makers, it tends to continue to be strongly influenced by the work of Florida et. al., which fetishises place competition as the solution to the global polarisation of wealth. This perspective ignores the socio-economic historical context that determines whether places are inherently disadvantaged and therefore unable to compete on anything like a level playing field. Thirdly, foundational economics offers a potentially fruitful landscape to support the development of more economically, socially and environmentally sustainable communities. Foundational economics, by its focus on the mundane goods and services, is inherently local. It does not ignore externalities, but rather it seeks to centralise the importance of the ‘good life’ for people living within spatial contexts. Its mantra is ‘reorganise’. Fourthly, it is important to understand the geopolitical policy-making processes, as a result of both intra- and extra-place influences. This will illuminate local policy-making, and is a prerequisite for influencing policy development. This is critical when regional government and others make policy decisions on the commitment of significant investment in infrastructure.

This discussion of the economic context is highly relevant to the current policy context in South East Wales, with the development of Cardiff Capital Region, the City Deal agenda and the proposals around infrastructural investment with the creation of the Metro. In the following section we consider the international evidence around transport infrastructure investment, before returning in the final two sections to consider the potential impact of the Cardiff Capital Region Metro on the economy of South East Wales.

The impact of large-scale transport investments

Justifications for transport investment tend to be based on fairly standardised evaluation/potential impact criteria. Bristow and Nellthorp in their review of the transport investment appraisal practices of the EU (2000), suggest that travel time savings, accidents, environmental impacts and regional economic impacts were the common measures used. A connection is commonly made between transport investment, which produces improved accessibility, and increased economic activity. Yet there is very little robust evidence that measures the non-transport impacts of public transport investment. The development of evidence-based indicators around wider socio-economic and regional impacts continues to be, as Vickerman (2000) identified, particularly weak. Mejia-Dorantes and Lucas (2014), argue that although in some instances there appears to be evidence to suggest that public transport investment can lead to non-transport benefits, there are too many variables to conclusively prove a link between the two. Such variables include, though are not limited to: type of public transport; local geography; the nature of the built environment; pre-existing labour market and property and land uses (page 242). The tendency has been that little regard is paid to employment created or protected by investments, except in Germany, where equity was an important consideration in relation to the Eastern lände. Shi and Zhou (2012), found a similar disregard of equity and distributional measures in the East/West China context, which has led to harmful socio-economic effects. There has been little work undertaken on the potential benefits for small businesses as a result of transport investments.

An incomplete or inadequate set of criteria used to evaluate the impacts/potential impacts of transport investment can lead to inaccurate assumptions. There is a need to be careful about cause and effect relationships between economic growth, transport investment and transport demand (Banister and Berechman, 2000). Transport investment may simply be coincidental, and economic and other outcomes may not be attributable to it. This danger was highlighted by Lawless and Gore's (1999) case study of transport investment in Sheffield during the 1990s, which argued that the impact of transport investment on regeneration had not been particularly strong. They suggested that 'other promotional activities and facilities are likely to have a larger impact on "selling the city" than transport' (page 533), and that '…far more land-use change and associated development can be ascribed to new road investment', as 'for most businesses, transport continues to revolve around roads and private vehicular access' (pages 536, 540). The set of criteria used should also be spatially specific. The spatial context is critical, argue Banister and Thurstain-Goodwin (2011), as transport investments can have different impacts in different locations. They suggest that we need to investigate the impact of transport investment at three distinct levels: macroeconomic (regional network effects); meso level (agglomeration economies and labour markets); and, micro level (land and property market effects). A full spatial consideration of impacts/potential impacts is important to determine who and where benefits from transport investments.

Who benefits from transport investment?

Banister and Berechman (2000) raise the question of whether transport investment in the periphery actually benefits the centre. Haddad (2015) considers the higher-order economic impacts arising from the São Paulo subway system, and found that while 32% of the impacts accrue to the city itself, the remaining 68% of benefit was split between other municipalities in the metropolitan area (11%), the State of São Paulo (12%) and the rest of the country (45%). In a report commissioned and prepared for Welsh Government, however, Mott MacDonald (undated) also considered the potential impact of rail investment. They concluded that 'increased rail investment in new lines and service improvements is likely to centralise (or re-distribute) economic activity to the better connected areas'. Moreover, 'where economic activity will centralise is dependent on the underlying economic conditions of the areas that have been connected'. For those communities with realistic commuting options, it is envisaged that they become 'dormitory settlements' (page 3). It cannot be assumed, therefore, that transport investments will have a necessarily positive impact for the wider city region. The evidence is mixed. Mori and Nishikimi (2002) argue that 'economies of transport density can be the key source of industrial agglomeration', but caution that although welfare levels can be enhanced where regions are geographically close, where they are not '…the hub region improves its welfare at the expense of the non-hub regions' (pages 194 – 195).

Moore and Posdena (2004) argued that transport investments are sometimes made for political rather than any rational cost benefit analysis. Moreover, they suggest that '…when society decides to assist the less fortunate it is implicitly saying it is willing to trade off a certain amount of efficiency for the improvement of societal equity' (page 40). This was evident in post-reunification Germany, where the initial decision to prioritise equity as an important indicator has had a longer-term impact on the German economy. Even where equity is a priority however, this link between transport investment and improved socio-economic outcomes is by no means automatic. Mott MacDonald (undated) considered the impact of recent rail investments and improvements in Wales, and found only limited impact on socio-economic factors. They found the following outcomes based on a range of criteria:

- Population – positive impact on growth, which might be accounted for by national population growth patterns;
- Employment – a slower decline in employment growth;
- Deprivation – no discernible impact;
- House prices – a slower decline in growth;
- Gross floor area – a negative impact on growth;
- Car ownership – no discernible impact (page 5).

None of these findings, in the Welsh Government-commissioned report, offers a significant endorsement of the wider socio-economic impacts of recent rail investments in Wales. The report also found little or no impact elsewhere of light rail investments on land use, employment, output, and house and other property prices. It is also worth noting that public investment in transport, as indeed in other types of capital investment, involves a choice of how best to spend finite resources. In their recent 'What Wales Could Be' report for FSB Wales, CRESC (Brill et. al.,2015) offered a series of alternatives for capital investment options, such as investment in new types of care homes, which highlighted this choice.

Transport hubs

As indicated above, the second Metro report suggested that the creation of Metro hubs across the Cardiff city region would lead to positive economic impacts across the network. Heddebaut and Palmer (2014) argue. However, that the link between multimodal interchanges and their impacts on land use is not automatic in the absence of a strong integrated development plan associated with policy makers' involvement. Banister and Thurstain-Goodwin (2011) also suggest that the spatial effects of transport hubs can vary according to the type of activity. The impact areas for residential developments could extend to 1000m, whilst those for commercial development could extend up to 400m. This seems far too general an observation, however, they do point out the actual impacts are likely to be context specific (page 217). As a general rule, the logic of commercial development impact being shorter than residential would seem valid, as it would appear to be determined by the distances people are prepared to walk in respect of each activity. This is an important consideration, given the varying view about whether the Cardiff Capital Region Metro will support economic development across the city region, or whether it will reduce peripheral towns into dormitory settlements. It might suggest that the most appropriate development resulting from Metro hubs is likely to be residential, rather than commercial.

As cautioned above, there is a need to be clear on cause and effects, and this is equally true of potential hub effects. Gospodini (2005) considered the data relating to the Manchester Metrolink-light Rail System, where 'hard data analysis shows no clear urban development and regeneration effect from the Metrolink'. Although there has been urban development, redevelopment and renewal in Manchester, they could not (at least until the study was published) be attributed to the Metrolink as none had taken place in the corridor areas. Moreover, Gaspodini argues that although there have been considerable rises in rents on commercial/retail spaces since 1980, these have occurred in all areas – corridor and non-corridor areas. This trend, they argue, could not be associated to Metrolink, but related to more general parameters in the real estate market and the general economy of the area. This does ask the question, is the real estate market of sufficient strength in the Cardiff city region outside of Cardiff itself to support comparable developments? In their longitudinal study of the impact of the Bay Area Rapid Transit (BART) in San Francisco, Cervero and Landis (1997) found that BART had, of itself, made little impact on land use, although in some circumstances it had been an important contributor depending on other interventions. There is also a potential negative effect of transport investment on local economies. Castillo-Manzano and López-Valpuesta (2009) in their study of the impacts of urban metro systems on three middle-sized Spanish cities (Bilbao, Málaga and Seville), show potential negative effects on small businesses located near transport hub developments – the short term impacts of the build process and the longer-term issues around increased land values, which may push small businesses out in favour of larger ones more able to afford the higher land and rental values (page 146). This is an important point; transport investments do not necessarily benefit local and small businesses.

Verhetsel and Vanelslander (2010) in their study of Brussels and Flanders, found that although the location of a railway station or proximity of bus, tram or metro stops can encourage more use of these forms of transport, the car is still the most important mode of transport. Percoco and Reggiani (2007) argue that 'interregional interactions result from consumer preferences and behaviour, which are in turn influenced by the structure of the transport network' (p.526). Generally, the main factors that determine the distance people are prepared to travel does seem to vary significantly between types of activity. Scheiner (2010) further argued that trip distances for all travel purposes are strongly influenced by social status 'the size of activity spaces appears to be significantly affected by vertical social inequalities' (page 688). Even assuming the Metro were fully realised, the distances between the Heads of the Valleys towns (which account for the most deprived areas of the Cardiff city region) would remain considerable and, unless heavily subsidised, the cost would be significant for lower-wage earners in particular. The Industrial Communities Alliance, in their 2015 case study of the Cardiff city region, quote Welsh Government 2011 'Commuting in Wales' figures, which show that during that year: 20,000 residents commuted from RCT to Cardiff and 15,000 from Caerphilly; but, just 1,000 from Blaenau

Gwent, 1,900 from Torfaen and 2,300 from Merthyr Tydfil. This would appear to support the argument that the more remote and poor areas are, the more limited activity spaces are likely to be.

The discussion above suggests that the socio-economic impact of transport investment is highly contingent on the context within which it takes place. Deng (2013) highlights conflicting international evidence around the transport infrastructure-growth hypothesis. He argues that one explanation for the conflicting results of the impacts of transport investment is the capability of a country in enabling economic development (page 696). Yu et. al. (2012) quite clearly argue that the economic effects of transport investment are by no means automatic – they are contextual and have different effects in different areas. Takeda et. al. (2008) though generally supportive of the potential of transport investment acknowledge that '…firm location is not only determined by infrastructures' (page 538). Tsou and Cheng (2013) in their study of the Taipei Metro found that multiple urban structures determine retail patterns, and that the Metro itself, which had been in existence for some ten years at the time of their study, had limited impact on retail patterns. Similar arguments are supported by Gospodini (2005) in a study of 12 European cities, who acknowledges that although transport infrastructure may have a catalytic effect on development, redevelopment and regeneration of urban areas, a lot of other influencing factors will affect whether the process is successful or not. Tang and Lo (2008) argue that the economic success of Hong Kong has involved both transport investment and land development strategies. This would suggest that the socio-economic effects of transport investment identified in Hong Kong by Cho-Yam (2010) have also been caused by land development planning. This is a note of caution for those who argue that an injection of land use strategy to accompany transport investment can improve social outcomes. As we shall consider later, in the case of Hong Kong it has not.

The Cardiff Capital Region Metro

Delineated across two main reports (Barry, 2011*; and, Barry 2013), the Metro proposals set out a manifesto for the creation of a planned transport system across the Cardiff city region. The Metro would provide an integrated transport network, consisting of both heavy and light rail and rapid bus transport. The Metro Consortium has identified the potential key schemes as likely to include: a Valleys Circle Line by linking the Rhymney and Merthyr railway lines; a Cardiff Crossrail, using tram-train technology; a Bus Rapid Transit system to address poor connectivity linking places like Merthyr, Tredegar and Ebbw Vale; and a major upgrade of connectivity between Newport and Ebbw Vale. The establishment of the Metro would, the reports argue, be facilitated by a £300m public sector investment each year over a ten-year period. It would also have the potential, it is claimed, to have a transformational affect on the economy of the Cardiff city region, providing the connectivity to ensure that Cardiff has the infrastructure to compete internationally, to secure foreign direct investment, grow key sector employment in the Cardiff area, and provide improved commuting options for Valleys residents to travel to work in Cardiff and perhaps Newport. The Metro proposal has, importantly, galvanised wide support from Welsh

* The original 2011 report was commissioned by the Cardiff Business Partnership (consisting of Admiral, Boomerang, Freshwater, Grant Thornton, Hugh James Solicitors, Legal & General, Media Wales, Price Waterhouse Coopers, Principality Building Society, S A Brain & Co., Tata and Tesco), and funded by Admiral.

Government, local authorities and the wider policy community in Wales. It has also been identified as the priority project within the Cardiff City Deal.

The Metro and the South East Wales economy

The Metro proposals are set against a pervasive economic discourse in Wales, centred on the logic of internationally competitive city regions, which places an emphasis on securing inward investment through international competition, and on targeting 'key sectors' to secure growth and raise the Welsh GVA. This perspective largely became the dominant rationale for Welsh Government city region policy following the publication of the Haywood Report (Welsh Government, 2012), and was also recently espoused within the Cardiff Capital Region Report (Lewis, 2015). There is also a heavy emphasis on Cardiff-based development. The Metro proposals are clearly consistent with this perspective. The Foreword to the 2011 Metro report states that there is global evidence that connected city regions can be an engine of economic growth (Barry, 2011). As part of the 'international competitive cities' thesis, Docherty et. al. (2009) argue that 'Britain's cities rely on less efficient methods of getting people around, especially for large flows, than their competitors do…in the contemporary scenario of intense competition where each city needs to get a step ahead of its competitors, failure to invest in transport can mean failure to compete effectively at all' (page 327). Lakshmanan (2001) argues that 'transport improvements open up markets and create conditions, in the context of spatial agglomeration and technical change and diffusion, which influence economic structure and performance' (page 11). This is also evident in Bristow and Healy's (2015) evidence to the National Assembly for Wales Enterprise and Business Committee, where they argue that city region and Metro developments need to be linked to realise economic success for the region.

Economic discourse tends to focus on the relative merits of attracting jobs per se versus attracting highly remunerated jobs (see, for example, Waite 2015). The parameters of this debate, however, risk overlooking what economic activity Wales already has, and therefore potentially missing opportunities to support its development. Often missed in the debate is the prioritisation of growing Wales' own indigenous businesses. It would also appear to downplay the residual manufacturing base that exists across the area of the Cardiff city region. Although only accounting for on average 11.4% of jobs across Wales, manufacturing accounts for 22.9% of jobs in Caerphilly, 21.3% in Blaenau Gwent and 17.3% in Torfaen. As Waite (2015) observes, there is a risk in concentrating too much attention on growing high value service sectors, as the city region contains a sizable residual manufacturing base. It also risks overlooking what CRESC has entitled the 'foundational' economic activity, which accounts for some 40% of employment on average, and an even higher percentage in some areas of Wales. The foundational economy consists of employment in taken-for-granted 'mundane' services and goods, in areas such as food, telecommunications and care (Bentham, 2013).

City regions have become the major focus of economic development intervention, with think tanks like the Centre for Cities arguing that city region boundaries are a better focus of activity than arbitrary local government administrative boundaries (Waite, 2015). Caution needs to be exercised, however, as there is a risk of replacing one local government level arbitrary boundary with another, city region arbitrary boundary. Jonas and Ward (2007) argued that we need to better interrogate the city region logic. Not since the abandoned Wales Spatial Plan (Welsh Assembly Government, 2008) has there been any real consideration of the interconnectedness of Welsh towns and cities, and there has been no meaningful attempt to rectify this shortcoming in the debates surrounding the Cardiff city region or the Metro. Welsh Government's economic strategy (2010) did not consider the interconnectedness of places, and the much-quoted Haywood Report (Welsh Government, 2012) only considered them through a city region lens. The Industrial Communities Alliance (2015) used evidence relating to the slower jobs growth in cities, vis-a-vis their hinterlands, during the long period of growth leading up to 2007 to call into question whether cities are, in fact, the engine of growth at all (although they do concede that following 2012 growth in the core cities was, in fact, higher than their hinterlands). They also question whether concentrating more powers with the core cities will actually harm growth outside of the city boundaries, 'far from being a benign force driving growth in their wider regions, some big cities are actually eroding the economic base of the towns in their surrounding areas' (p.12). There is a danger that the use of a politically determined city region as the basis for the Metro system could cut across existing and potential interconnectedness of local economies. Neither the Haywood Report (2012) nor the majority of economic policy-making since has fully considered existing local economies.

The Metro proposals argue that transport investment can play a pivotal role in securing economic success, by enabling the movement of people from the Valleys into new employment opportunities created in Cardiff. The 2013 update to the Metro proposals provides greater detail, particularly with regard to the opportunity the Metro provides to '…rethink the role of some of our [the Cardiff city region's] towns and communities across the Valleys' (Barry, 2013, page 8). The update also argues that the Cardiff Metro has the potential to deliver comparable outcomes to Transport for Manchester's claims that its £1.5m transport investment programme will lead to 21,000 new jobs and an extra £1.3bn in the regional economy. The Metro Impact Study (2013) claims that by 2030 the Metro could support the creation of 7,000 jobs. It argues that investment should be on the basis of opportunity rather than need; it says 'a philosophy which has concentrated investment on need rather than opportunity, has resulted in an economy plagued by homogeneous mediocrity'. It states that directing resources at the Valleys has not worked, and a new approach of concentrating resources in Cardiff '…as the engine of growth for the entire city region…' is needed (Barry, 2011, pages 4 – 5). This would also seem consistent with Welsh Government's position on the Metro, which promotes its ability to deliver an 'agglomeration effect' (Welsh Government Ministerial Statement, 2015). In future, the Metro proposals argue, the central strategy should be to bring '…people to the jobs, rather than trying to bring jobs to the people' (page 22).

Spatial impact

There are those who believe that the ability of Cardiff to created sufficient new jobs to provide the additional employment required for Valleys residents is highly questionable. Beatty and Fothergill (2011) argue that 'worklessness in the Valleys is unlikely to be reduced much by jobs growth in Cardiff'. They suggest 'this is partly because employment growth in Cardiff is unlikely to be sustained at the same pace and partly because of the sheer scale of the jobs gap in the Valleys' (page 5). They statistically show how, in absolute terms and in relation to the size of the local working-age population, Cardiff's growth far outstrips either the rest of the coastal strip or the Valleys. They argue, however, that during the period up to 2011 growth was made up of 15,300 additional jobs in the public sector, and 11,000 jobs in the private sector (page 26). In the era of public sector cuts, this does not suggest the growth can be continued. More fundamentally, they argue that as the Valleys would need to see 72,000 additional jobs to raise employment levels to the best performing 142 districts across the UK (and 42,000 additional jobs just to get to UK average), these new jobs are unlikely to be provided by a city the size of Cardiff with just 330,000 people, even assuming that a large proportion of any new jobs it might create will be filled by Valleys residents (page 27). In 2008/09, the net outward commuting flows of the Valleys were 53,000 (page 28). If the additional jobs required were created in Cardiff, the number of commuting flows would need to be significantly more than doubled. Even if the Metro proposals were fully implemented, this hardly seems plausible.

It is questionable to accept that, as Waite (2015) has argued, '...common-sense is clearly reflected, in that the Metro will help workers access opportunities arising in Cardiff, as the major employment agglomeration' (page 27). There is no guarantee that Cardiff can provide sufficient jobs growth to provide a solution to the Valleys jobs gap, or that workers not currently in employment will be able to make use of its improved services. Adamson and Lang (2014) highlighted the prohibitive cost of commuting for lower income workers in the South Wales Valleys. A similar finding was identified in the poor district of Tin Shui Wai, Hong Kong by Lau (2010), where transport planning has produced highly efficient services, but where poor people are unable to afford the cost of travel to find employment. Lau argues that 'simply improving transport infrastructure or shortening travel time to workplaces' is insufficient (page 45). Cho-Yam's (2010) work looking at public transport in Hong Kong found that due to the demand for public transport and its dominance of daily commuting, house prices near major hubs has pushed living near these hubs well beyond the reach of those on low incomes; whereas the hub-and-spoke nature of the transport system meant that the public transport system in less accessible areas incur higher travel costs. Each of these factors prevents low-income workers from reaching distant employment. He argued that governments should subsidise the travel of those on low income, conduct social impact appraisals on public transport investments to ensure equal mobility for all and create jobs in older urban districts (page 412).

The second Metro report introduced the potential for 'Metro hubs' across the network to act as a catalyst for regeneration and development outside of Cardiff, '…by providing connectivity, Metro stations can themselves become catalysts for regeneration and development' (Barry, 2013, page 8). This would appear to be a notable change in tone from the first report, at least acknowledging the importance of supporting economic activity across the region, not just in Cardiff. In a presentation in July 2015, Mark Barry also reiterated the economic logic behind the Metro: 'The Region needs to deliver agglomeration benefits through: more accessible and higher value jobs in Cardiff AND more jobs across the region in places the private sector will support…'. He said 'connectivity drives economic activity' (RSCW Future of the Valleys Event, 08/07/2015). Welsh Government has apparently made it clear, however, that it believes local authorities would be responsible for the development around Metro stations (and potentially even the stations themselves) via any Section 106 funding they can secure. Planning obligations under Section 106 of the Town and Country Planning Act 1990 are a mechanism that makes a development proposal acceptable in planning terms, which would not otherwise be acceptable.

Despite fairly clear proposals outlined in the Metro reports, there remains some ambiguity over the location of Metro infrastructure, with Welsh Government refusing to commit to a map, the costs of the investment, and timescales for completion. There is also a lack of clarity over how the Metro will be delivered. There appear to be inconsistencies between Welsh Government and the Metro Consortium in these respects. It argued in 2015 that 'the estimated total cost of phase 2 is between £500 million and £600 million of capital investment', though it did not make clear what 'phase 2' would consist of, nor how it would meet the significant costs (only that it had reached an agreement with the UK Government for £125m and was bidding for £150m from ERDF). It also claimed that it is not possible to have a definitive map for the Metro as 'most LDPs haven't got definitive maps of what they're doing yet' (Welsh Government Ministerial Statement, 2015). Welsh Government also claims that it has successfully delivered 'phase 1' of the Metro. It is hard to substantiate such a claim, however, as Welsh Government never set out in advance that it was delivering such a programme. It appears to bundle a range of transport projects together that claim to move the Metro forward. Welsh Government has now claimed it has completed phase 1 of the Metro, and in 2013 (Welsh Government Press Release, 26/11/2013) it identified those projects that constituted phase one of the Metro: Newport Bus Station, Merthyr Bus Station, bus lanes across South East Wales, cycle lanes design works in schemes in Merthyr, Newport, Bridgend and Cardiff; Ebbw Vale Railway Line extensions and station at Ebbw Vale Town, and a number of disabled access improvements at railway stations in Barry, Treforest, Cathays, Llanelli and Treherbert. Upon closer examination it might prove that these were schemes that were to progress with or without the Metro branding. If this were the case, then it would appear rather disingenuous.

Access to public services

As part of its report to the Welsh Government, the Metro consortium developed a Spatial Map (Barry, 2013c), which considered the potential impact on the region. One of the key issues it addressed was the positive potential impact of the Metro on the accessibility of 'strategic healthcare facilities'. This discussion contained a number of serious errors, including the improved accessibility of Tredegar General Hospital. It should be noted that the Tredegar General Hospital closed in 2010, three years prior to the Metro report being undertaken, and had, in any case, been significantly downgraded as a healthcare facility long before its closure. The Metro report also identifies a range of other healthcare facilities, but their 'strategic' status is not what the Metro consortium claim. The most significant error in this assessment is the absence of its discussion of the proposed new Specialist Critical Care Centre (SCCC), which has been planned by the Aneurin Bevan University Health Board and Welsh Government for at least the last eight years. The SCCC is a key component of the Health Board's 'Clinical Futures Strategy', which says 'the concept of the SCCC is to create a highly specialised environment to support the treatment of complex morbidity and acute emergency care...the SCCC will serve the entire Gwent catchment and South Powys residents'. Considering its significance for the future healthcare of the residents of the Cardiff city region, it is a surprising omission from planning the spatial connectivity of the Metro, particularly given that the hospitals it will remove services from are identified in the Plan. The SCCC will be located at the site of the current Llanfrechfa Grange Hospital, which was a small specialist facility and is in the process of being decommissioned. Its accessibility status, according to the Metro report, will not be improved as a result of the Metro. It is critical that the spatial planning and potential 'map' of Metro services properly considers the accessibility of public services as well as economic centres.

The potential impact of the Cardiff Capital Region Metro

There is no doubt that the Cardiff Capital Region Metro proposals offer a significant scheme for improved public transport connectivity throughout South East Wales. It is also clear that the region suffers from poor internal connectivity resulting from a weak and fragmented transport system. The case presented offers a range of measures that are likely to lead to improved reliability, integration, travel-times and network planning. From a service user perspective new rolling stock is likely to lead to an improved passenger experience and therefore may boost the numbers of commuters that utilise public transport as a means to travel and commute. The focus of this paper, however, has been to consider the potential economic and social impacts of the Metro. In this respect, the evidence is mixed.

The Metro has the potential to offer a scheme that garners widespread political support, and could help to build the architecture for the city region experiment and City Deal programme. This approach fits with an emphasis on internationally competitive cities, the rationale that has come to dominate economic priorities in Wales. Placing an overriding emphasis on securing foreign direct investment and associated

Welsh Government financial backing to facilitate it, however, risks overlooking opportunities to support Wales' existing and small businesses. It also risks overlooking current spatial interconnectedness in a quest to impose city region architecture on the socio-economic landscape of South East Wales, which is little understood. In the context of the Metro, it is important to understand that the economic rationale for the investment is based on a particular view of how to grow the Welsh economy, and this view is based on limited evidence. The international evidence about the impact of major transport investment is mixed. There are a range of potential unintended consequences, which have been seen to have negative effects on poorer communities. It may actually become more difficult and more expensive for the very poor to access public transport. The idea of the 'Metro hub', which was introduced in the second Metro report to illustrate how the Metro might aid development across parts of the network outside of Cardiff, may have unintended consequences. As we have seen, the spatial planning evidence presented by advocates of the Metro contains some significant shortcomings.

There is little robust international evidence around the measurement of non-transport impacts arising from major transport investments. Part of the reason appears to be the existence of too many variables to assess impact accurately, and the most commonly ignored factor is equitable outcomes. This can lead to inaccurate assumptions around the impacts on investment and the confusion of cause and effect in post-investment evaluations. The international evidence of who benefits from investment, centre or periphery, is mixed. It cannot be assumed that the wider city region will benefit, as it may actually suffer. This is part of a much wider debate about city regions. As shown in Castillo-Manzano and Lopez-Valpuesta's 2009 study, small businesses may actually be disadvantaged. Distance is also a key socio-economic consideration. Those living closest to the core of a planned transport investment may benefit far more from the investment than those at the periphery. The overwhelming balance of international evidence shows that understanding the context to major transport investment is critical to determining its likely success. Context appears to be critical. This work has not adequately been undertaken in the case of the Cardiff Capital Region Metro.

That said, the extremely poor transport network in South East Wales cannot be ignored. Nor can the ignorance of the extremely poor economic performance of the region, or its social consequences, be acceptable. The reality is that transport, or any other form of infrastructural investment, will not of itself address the underlying economic problems of South East Wales or the social consequences. Perhaps, just perhaps, if steered toward the best approach to equitable outcomes, it could form part of a broader answer. The balance of international evidence suggests that transport investment is not, as some would argue, an economic 'silver bullet'. Context is critical, and in that respect South East Wales, and Wales more generally, needs to have a more open and honest debate about what sort of country we want to be and what is important to us. Only by addressing this question, can we design the right economic context within which infrastructural investments such as the Metro have a chance of delivering meaningful outcomes. The Wales We Want 'National Conversation' led by the former Future

Generations Commissioner, Peter Davies, was clearly an important part of developing the Well-being of Future Generations Act, but there was, and there remains, a disconnect between this conversation and economic policy-making. Economic discourse in Wales remains the purview of a small elite. Given the importance of our economy to all our lives, we need a meaningful dialogue in each of our communities about what we want and need it to be. The Metro could become a grid-like network, integrating communities across South East Wales, but it could also become part of the series of factors that have contributed to the decline of local economies in communities outside of Cardiff.

The core recommendations to arise from this paper are:

- The need for meaningful research to understand the interconnectedness of towns and cities in South East Wales;
- A comprehensive evaluation of how best to support the growth and development of small businesses and local economies across South East Wales, in light of a detailed appraisal of the strengths, weaknesses, opportunities and threats of the region's local economies;
- A reappraisal of the Metro spatial map to ensure transport investment meets the economic and social needs of South East Wales;
- The need to identify and develop clearer and more effective pre and post-investment indicators of success, so as to accurately monitor the impact of the Metro;
- A conversation with communities and local businesses across South East Wales to consider their priorities for a more resilient future economy of their towns and the region as a whole.

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