



WORKING PAPER

ITLS-WP-21-18

**Unlocking Public Procurement as a
Tool for Place-Based Industrial Strategy**

**By
Christopher James Day and Rico
Merkert**

Institute of Transport and Logistics Studies (ITLS),
The University of Sydney, Australia

September 2021

ISSN 1832-570X

**INSTITUTE of TRANSPORT and
LOGISTICS STUDIES**

The Australian Key Centre in
Transport and Logistics Management

The University of Sydney

Established under the Australian Research Council's Key Centre Program.

NUMBER: Working Paper ITLS-WP-21-18

TITLE: **Unlocking Public Procurement as a Tool for Place-Based Industrial Strategy**

ABSTRACT: The Global Financial Crisis and, more recently, the COVID-19 pandemic have highlighted the perils of industrial atrophy and spatial inequality rampant within advanced economies. Despite growing interest in lifting economic performance on the part of scholars and practitioners, the nature of entrenched economic frameworks limits the extent of effective intervention. By taking an interdisciplinary approach and reviewing extant literature examining the underestimated value of advanced manufacturing, this paper identifies a context in which government can use its procurement power in a non-discriminatory manner. The nature of agglomeration economies, employment substitution and diseconomies of scale suggests that the overlooked financial benefits of place-based industrial strategy around advanced manufacturing clusters are greatest in lagging regions.

KEY WORDS: *Place-Based Industrial Strategy; Public Procurement; Advanced Manufacturing; Industrial Policy; Regional Policy*

AUTHORS: **Day and Merkert**

CONTACT: INSTITUTE OF TRANSPORT AND LOGISTICS STUDIES
(H04)

The Australian Key Centre in Transport and Logistics
Management

The University of Sydney NSW 2006 Australia

Telephone: +612 9114 1813

E-mail: business.itlsinfo@sydney.edu.au

Internet: <http://sydney.edu.au/business/itls>

DATE: September 2021

1.0 Introduction

Since the 1980s, Anglosphere economies, defined as the United States (US), United Kingdom (UK), Canada, Australia and New Zealand (NZ) have rapidly deindustrialised (UNIDO, 2020). While the resulting structural transition has been hailed as an enormous success by the majority of economists, who attribute economic growth to open markets and classical trade theory (Fuller & Geide-stevenson, 2003; Ricardo, 1817; Smith, 1776), fractures in the health of these economies have emerged (Bailey & De Propriis, 2014). Levels of inequality have risen (Horowitz, Igielnik, & Kochhar, 2020; Picketty, 2011), productivity growth has stalled (ONS, 2015), trade balances are generally weak (Elliot, 2013) and spatial disparity in economic output has climbed markedly (Glaeser & Gottlieb, 2009; Glasmeier, Martin, Tyler, & Dorling, 2008). This has raised questions regarding the sustainability of neo-liberal frameworks and the role that government can play through place-based industrial strategy.

Place-based industrial strategy is comprised of two components: location and industrial policy. Although significant tensions exist, regarding both the definition and scope of industrial policy (Andreoni, 2016), it is generally agreed that industrial policy consists of interventions which attempt to improve the competitiveness and structure of industrial activity within a region to deliver economic and societal outcomes superior to those achieved by the market alone (Warwick, 2013). Policies and industrial strategies include support for emerging industries, development of clusters, government procurement and innovation incentives (Cimoli, Dosi, & Stiglitz, 2009). While horizontal interventions such as the provision of basic education and infrastructure are less contentious, Chang, Andreoni, and Kuan (2013) argue that all interventions implicitly benefit some industries over others. This makes it important for policy and decision makers to acknowledge the existence of industrial strategy and ensure that actions are targeted and having desired, as opposed to inadvertent, impacts.

Industrial policy takes on a spatial dimension when it seeks to have an impact on the geographic distribution of industrial activity. This takes place at five distinct levels:

- (i) Local (e.g. Local Government Areas)
- (ii) City/Regional (e.g. Greater Metropolitan Areas, Counties)
- (iii) State/Province (e.g. California in the US, New South Wales in Australia)
- (iv) National
- (v) Supernational (e.g. European Union)

Globalisation has had a profound influence on the impact of space (Barca, McCann, & Rodríguez-Pose, 2012). On the one hand, innovations have made transport of capital, goods and people more efficient (T. L. Friedman, 2005), on the other, the influence of agglomeration forces has cemented the attraction of prosperous regions (Glaeser & Kohlhase, 2004; McCann & Folta, 2008). The latter has tended to dominate causing a growing rift between prosperous and lagging places. In response, place-based industrial policy has become increasingly important where policies not only target specific industries but geographic areas which have been left behind.

The literature has extensively explored the use of public procurement as both an industrial strategy (Dale-Clough, 2015; Lember, Kalvet, & Kattel, 2010; Uyarra, Zabala-Iturriagoitia, Flanagan, & Magro, 2020) and place-based industrial strategy tool (Bailey, Pitelis, &

Tomlinson, 2018; Morgan, 2019). Although interest in the use of public procurement to achieve a broader set of policy goals is well documented, tension between this emerging view and that of free-market advocates remains pertinent. This is observed in both the academic literature and the procurement documents of numerous Anglo economies (HM Government, 2018; NSW Treasury, 2020). While the 2008 Global Financial Crisis (GFC) has been credited with initiating a rethink of the prevailing economic model (Bailey, Glasmeier, Tomlinson, & Tyler, 2019; Chang et al., 2013), initial enthusiasm for the adoption of unorthodox economics rapidly gave way to “growth friendly fiscal consolidation” or “austerity” (Blyth, 2013). For instance, the UK’s central government abandoned links between public procurement and broader policy objectives in favour of price considerations. At a 2013 Public Administration Select Committee in the House of Commons, the Rt Hon Francis Maude, Minister for the Cabinet Office and Paymaster General, in reference to the Social Value Act, stated: *“My predilection generally is that you should not load procurement with values and requirements other than getting what you want at the best price. There is always a temptation to use procurement to deliver other desirable objectives. My preference always is to keep it as stripped down and limited as it can be.”* (Public Administration Select Committee - Minutes of Evidence HC 123, 2013). Notwithstanding, the use of place based procurement to drive secondary objectives has been much more prevalent at a local level throughout the Anglosphere (Centre for Local Economic Strategies, 2017; Rowe, Peredo, Sullivan, & Restakis, 2017; VIC, 2020).

Divergence between the views of national and local/regional authorities has created tension in both procurement orthodoxy and between spatial levels, making their investigation particularly informative. Anglosphere economies are especially interesting to examine for several reasons. While the degree to which these factors apply to each country is likely to differ, these nations retain similarities in their patterns of relative deindustrialisation since the 1980s (Rowthorn & Coutts, 2013; UNIDO, 2020)¹, strong adherence to neo-classical economic principles and growing spatial imbalances (Hamilton Project, 2018; Larose, 2020; Martin, Pike, Tyler, & Gardiner, 2016; Martin, Sunley, Tyler, & Gardiner, 2016).

Figure 1. Manufacturing value added (MVA) as a percentage of GDP across the Anglosphere, major and small successful economies.

¹ See Figure 1

Iturriagoitia, 2012). Although the theoretical rationales for using public procurement as a tool to achieve secondary objectives are sound, they do not address tension with neo-classical views; a challenge which continues to plague both theory and practice. Retention of a strong financial approach plays an important role in protecting government buyers from gaming by bidders and ensures that local industry isn't insulated from competition. This paper argues how augmentation of neo-classical frameworks in the special context of advanced manufacturing enables achievement of broader policy objectives without disrupting the existing paradigm.

Procuring domestically, whether that be locally, regionally or nationally, generates a number of real financial benefits that are overlooked by existing cost-based appraisal. This leads to a misallocation of resources. When these benefits, notably employment, investment in research and development (R&D) and exports are accounted for (Helper, Krueger, & Wial, 2012), cases may arise where favouring domestic producers results in the best value for money to taxpayers. Unlike previous arguments in favour of using procurement more proactively, incorporation of overlooked financial benefits in high value sectors operates within the neo-classical framework and improves the efficiency of resource allocation. As mentality shifts associated with concepts such as "new municipalism" gain traction, the conceptual argument developed in this paper enables their reconciliation with bi and multilateral trade rules associated with other government levels within the same nation.

The conceptual framework developed in this paper not only enables public procurement to achieve broader policy objectives through its incorporation of overlooked financial benefits, but has implications for nurturing regional ecosystems and improving the spatial distribution of economic activity. It is well documented that the transition from industry to services had an asymmetric impact. Cities able to transform into knowledge centres prospered while employment in former industrial regions tended to be low skilled and poorly remunerated (Martin, Pike, et al., 2016; Martin, Sunley, et al., 2016; Nolan, 2004). Unlike services sectors, which benefit tremendously from agglomeration in world cities (Glaeser & Kohlhase, 2004), manufacturing activity often takes place outside of major financial centres. Martin, Pike, et al. (2016) state that many Northern UK cities "still have significant manufacturing potential" (p.353) where the redirection of capital to these regions would assist in their growth and development. By identifying sectors where government is a major buyer, such as transport, defence, energy and medical supplies, procurement officials can judge where expenditure can be purposefully directed to support existing or emerging advanced manufacturing clusters. It is likely that the impact of procurement capital will be strongest in relatively poor performing regions. This is due to the limited availability of substitute employment opportunities and the impact of congestion on places with high levels of economic concentration. By being able to target lagging regions, well-directed and appraised public procurement is key to how government can intervene within a financial framework supportive of existing trade agreements while promoting stronger industries in places facing high levels of spatial inequality.

It is important for government to capture both jobs and value for their economies (Gruber & Johnson, 2019) and, in our view, place-based industrial strategy is a vital means to this end. By identifying multiple sources of theoretical and practical tension and reviewing multiple streams of overlapping literature, this paper postulates that public procurement, which analyses the broader financial benefits of advanced manufacturing, has the potential to

strengthen and develop advanced manufacturing clusters. Though not a silver bullet, this creates significant potential for policymakers and decision makers seeking to promote stronger industrial capability and more balanced regional growth within the prevailing economic strategy framework. In future studies, we empirically test the conceptual framework developed in this paper through case studies in the passenger rail rolling stock industry. Accordingly, our discussion draws examples from this sector.

The remainder of this paper is structured as follows. We commence, in Section 2, by detailing tension in the literature between the neo-liberal and policy-based views of procurement. Section 3 uses a document review to briefly explore the persistence of this tension in practice. To resolve this tension, Section 4 examines the nature of contemporary industrial ecosystems and advanced manufacturing to determine if a special financial case exists. Section 5 discusses how the arguments developed in this paper can be implemented in practice and the challenges that will be faced at varying spatial levels.

2.0 The Role of Public Procurement

Public procurement, which refers to goods and services purchased by governments, comprises 12 percent of gross domestic product (GDP) across members of the Organisation for Economic Co-operation and Development (OECD) (OECD, 2019). The magnitude and scale of government purchases places enormous responsibility on policymakers to ensure that capital is allocated efficiently and effectively, not only at the national but also the regional/spatial level (Morgan, 2017).

Prior to the 1980s, developed economies utilised a wide variety of policy tools, such as tariffs, subsidies and nationalisation, to protect domestic manufacturing (Arrowsmith, 2003; Branco, 1994). These policies often lacked a solid economic rationale and paid little heed to an industry or region's underlying competitiveness (Shoch, 2001). In response to growing concerns that heavily subsidised and uncompetitive industries were stifling innovation and exports, successive governments shifted their trade and industrial policies towards those advocated by classical economic theory (Bartlett, 2014). Anderson, Kovacic, and Muller (2012) argue that competition through liberalised markets is critical to achieving value for money in the procurement process through three mechanisms: market access that reduces collusion, greater incentives for suppliers to become more efficient and larger inducement for supplier innovation. Discrimination that favours domestic suppliers risks the emergence of price fixing, corruption and reduced investment in R&D (Sorte Junior, 2015). Market isolation may also diminish the efficiency of outcomes by limiting a nation's access to certain technology (Kattel & Lember, 2010). For these reasons, the cost effectiveness or neo-classical model of public procurement is viewed by proponents as the best means of achieving and maintaining a fair, transparent and unbiased tendering process (Keulemans & Van de Walle, 2017). As economic growth and innovation are perceived to arise from high levels of competition, academics and practitioners of the neo-classical school contend that public procurement has no justification as an industrial strategy tool (Evenett & Hoekman, 2005).

Despite literature grounded in the neo-classical school discouraging the use of public procurement as a broader policy instrument, governments have frequently deployed their major buyer status to influence markets through specifications defined throughout the tendering process (Jaehrling, 2014; McAfee & McMillan, 1989). This has been supported by

an established body of research outlining the role of public procurement in developing domestic industries, stimulating the local economy, driving innovation, protecting jobs and national champions, defending against international competitors and safeguarding national interests (Edquist & Zabala-Iturriagagoitia, 2012; Kattel & Lember, 2010; Morettini, 2011; Uyarra & Flanagan, 2010). These strategic objectives are often extended to target firms in areas with high structural unemployment, city regeneration and the protection of small and medium sized businesses (SMEs) that are locally significant (Loader, 2013; MacFarlane & Cook, 2008). Unlike tax breaks and direct subsidies, public procurement is a demand side tool capable of generating additional and stable levels of demand, and hence business activity (Frenken, 2017; Grillitsch, Hansen, Coenen, Miörner, & Moodysson, 2019). This sends a strong market signal which is especially important for technologically sophisticated and typically high-risk ventures (Hauser, 2014; OECD, 2011). Award of major government procurement contracts can foster the development of globally competitive industries and encourage further innovation through knowledge spill overs and synergies both in the urban and regional context. Bleda and Chicot (2020) identify three key stages where public procurement can drive innovation: market origination, coordination of adoption and adaption & retention. Georghiou, Edler, Uyarra, and Yeow (2014) find that public buyers are second only to market changes as a determinant of innovation. Following the award of public orders, approximately half of firms surveyed responded with an increase in R&D expenditure while 29 percent indicated that public procurement increased or enabled exports (Georghiou et al., 2014).

Use of public procurement to achieve secondary objectives has been popular at multiple spatial levels from supranational regions such as the European Union (Foray, 2014; Marques & Morgan, 2018) down to the local level (Bailey et al., 2018). Alhola, Ryding, Salmenperä, and Busch (2019) apply the concept of a circular economy to public procurement as a means of reducing waste and lifting efficiency. The idea of maintaining value within a community underpins foundational economy models (Centre for Local Economic Strategies, 2017; Morgan, 2019) which focus on the use of procurement to meet the basic needs of a local community. Examples include the UK's Preston Model (O'Neill, 2016), which has since been applied to other UK regions, and the Cleveland model originating from the US (Rowe et al., 2017). These models deviate from traditional views and perceive procurement as a tool of community wealth building where anchor institutions use their buying power to ensure that benefits are captured locally or within the relevant region.

It is undeniable that procurement has a profound influence on economic activity across a variety of spatial levels. Less clear is how procurement should be undertaken (Pickernell, Kay, Packham, & Miller, 2011). The above discussion reflects the existence of theoretical tension between advocates of a cost-based free market approach and those which favour greater use of procurement to achieve a broader set of objectives. This tension remains unresolved in the literature where the bulk of studies present arguments in favour of a certain model without acknowledging the potential for secondary policy objectives to be achieved through an enhancement of appraisal within a framework of open and competitive markets.

3.0 Public Procurement's Role – Practical Tensions

Tension concerning public procurement's core objective regularly plays out in practice. The neo-classical least cost approach has been widely adopted by developed nations which have enshrined principles of anti-discrimination and competition into their appraisal documents

and trade agreements. For example, Australia's Commonwealth Procurement Rules (CPR) emphasise 'value for money' through the promotion of competition, transparency, non-discrimination and the incorporation of quality lifetime costs (Department of Finance, 2019). While this framework encompasses more than simple cost minimisation, its remit remains narrow where emphasis is placed on CPR's operation within the framework of Australia's bilateral and multilateral agreements (Thurbon, 2016). Even in the United States, a country which far more heavily utilises government procurement as a policy tool through measures such as the Buy America Act (Manuel, 2016) and small business innovation research (SBIR) program (Thurbon, 2015), Baldus and Hatton (2020) find that US chief procurement officers are primarily driven by user satisfaction and cost when making procurement decisions.

The theories of comparative advantage and free trade have heavily influenced the formulation of trade agreements and World Trade Organisation (WTO) rules such as the Government Procurement Agreement (GPA) (Morettini, 2011; WTO, 2020). The European Union, UK, US, Australia, Canada, NZ, Japan, South Korea, Taiwan and Singapore are all signatories to the GPA which limits the ability of governments to use preferential procurement policies such as local content requirements. This creates incongruence between the rules applied by central governments and those used by state, regional and local governments. In Australia, the Commonwealth (Federal) Government and New South Wales (NSW) State Government emphasise non-discriminatory procurement. For example, the NSW Treasury (2020, p. 10) states that "*you must treat potential suppliers equitably and not discriminate based on business size, location or ownership*" and "*you must not discriminate against suppliers due to their foreign affiliation or ownership, or the origin of their goods or services, for procurements covered by enforceable procurement provisions.*" Concurrently, the state's procurement rules enable the use of procurement to support SMEs, Aboriginal-owned businesses, regional businesses, and disability employment. This reflects tension with reference to the scope of procurement within the same level of government. Further document investigation into procurement rules within Australia reveals that the Victorian State Government supports social procurement at both a state and local government level (VIC, 2020). Local Government Victoria has developed a toolkit which enables local councils to build stronger communities through procurement in a manner which parallels the UK's Preston model (VIC, 2021).² Furthermore, the Victorian Government has a fifty per cent local content requirement on procurement; a target which played a decisive factor in the state's recent purchase of passenger rail rolling stock for Melbourne (HCMTP, 2017). A similar case is observed in the US where the central government is bound to trade agreements (though numerous exemptions for defence, small business and the Buy America Act etc. have been negotiated) despite numerous regions and cities using procurement to achieve secondary objectives. For example, the Washington Metropolitan Area Transit Authority (WMATA) stipulated that firms bidding to manufacture its new fleet of railcars provide "a narrative describing economic benefits that will accrue to the local region as a direct or indirect result of the Contractor's performance of this contract" (WMATA, 2019, p. 34). A similar pattern is observed in recent railcar purchases for Boston, Chicago and Los Angeles.

² Victoria's local councils procure goods, services and works worth about AUD \$3 billion annually.

4.0 Resolving the Theoretical Tensions of Industrial Strategy

The preceding analysis reveals significant tension between the neo-classical and policy-based views of public procurement.

While both views of procurement have validity, their undiscerning application is likely to impose significant costs and result in sub-optimal outcomes. Taking comparative advantage and free trade views *prima facie* leaves economies exposed to becoming uncompetitive due to technological change and the industrial policies of foreign governments (Atkinson, 2019; Cypher & Dietz, 1998). For instance, China's state-owned rail rolling stock manufacturer CRRC underbids on contracts to drive competitors out of the market. In debriefing about CRRC's successful Boston railcar bid, runner up Hyundai Rotem stated that "I cannot grasp how they are able to do it at that cost" (Brotherton-Brunch, 2020). On the other hand, while the views presented in foundational economy and other policy-driven models of procurement are laudable, gaining timely acceptance of such approaches and balancing the benefits of competition remains unresolved.

This paper draws on the special case of advanced manufacturing to argue that the achievement of broader policy goals can be achieved within an augmented neo-classical framework. Although public procurement of goods requiring advanced manufacture cannot be undertaken in all local areas, the framework proposed in this paper provides a tool through which some local, many regional and all state and national governments can use alongside other place-based industrial strategies presented in the literature.

One of the key shortcomings of neo-classical economics is that it overlooks the heterogeneity of production activities both across and within sectors (Andreoni & Chang, 2016a). As all production capabilities are assumed to be symmetric, with no attention paid to technological intricacy and productivity, little justification exists for governments to invest in improving their nation's productive base (Lin & Chang, 2009). This has resulted in the popular view that all industrial policies and strategies should be horizontal or sector neutral. Such a perspective is problematic given differing levels of potential for productivity and export growth across sectors.

Manufacturing, particularly advanced manufacturing, is linked to "technology-driven productivity growth in modern economies" (Andreoni & Chang, 2016b, p. 5). The sector's ability to infuse productivity growth from automation, advanced machinery and chemical processing has resulted in rapid efficiency gains since the Second World War (OECD, 2020; Rowthorn & Coutts, 2013). This isn't achievable nor desirable in most service sectors with Bank of England Chief Economist Andy Haldane attributing falls in national productivity growth to manufacturing's decline from 17 to just 7 per cent of employment since 1990 (Haldane, 2017). Furthermore, the sector makes a disproportionate contribution to investment in R&D (Helper et al., 2012; Hewett, 2020) where the possession of a strong manufacturing base is seen as critical to the maintenance of a competitive knowledge base (Berger, 2013; Chang et al., 2013; T. Friedman & Mandelbaum, 2011).³ This is supported by recent evidence from the UK, which finds that official statistics for manufacturing overlook additional value

³ Going forward, this influences the export competitiveness of services.

generated in high value service sectors within manufacturing's value chain (Hauge & O'Sullivan, 2019).⁴ This has also been observed in the US (Bivens, 2019).

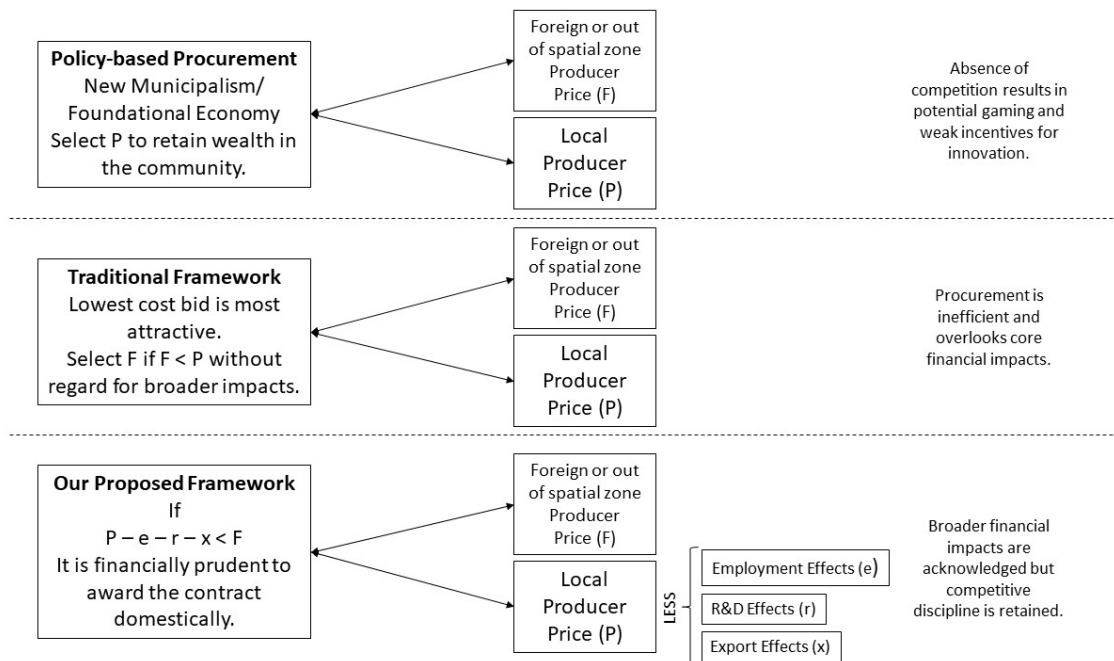
Modern manufacturing is comprised of complex geographically dispersed systems of production and innovation (Spring et al., 2017). Success is decreasingly tied to the management of an individual firm (Hayes & Wheelwright, 1984) and increasingly driven by access to advanced technology and capabilities (Menor, Kristal, & Rosenzweig, 2007; Mills, Platts, & Bourne, 2003) through business communities dubbed as "industrial commons" (Bailey et al., 2020; Bailey & Tomlinson, 2017; Pisano & Shih, 2009, 2012a, 2012b; Pitelis, 2015). As the benefits of innovation and manufacturing co-location increase with an activity's knowledge intensity and complexity (Ketokivi & Ali-Yrkkö, 2009), successful advanced manufacturing clusters require the development of an environment which nurtures and develops engineering expertise and R&D. To this end, Berger (2013) attributes the success of German firms to the nation's strong "industrial commons" and argues that the link between innovation and manufacturing justifies the retention of some production functions in the domestic economy, even at the detriment of short-term savings. Government can use major purchases to develop these commons where the influence of agglomeration forces will strengthen the competitiveness of a region through time (Martin, Pike, et al., 2016).

Kattel and Lember (2010) indicate that it is advisable to target strategic procurement policies at specific sectors rather than take a sweeping approach. This suggests that the value of using public procurement to generate economic activity within the domestic economy is dependent upon the industry being targeted. Given advanced manufacturing's disproportionate and largely underestimated impact on the economy, the sector presents a special context in which to utilise an augmented version of least cost procurement that achieves broader policy goals.

Helper et al. (2012) identify three primary mechanisms through which manufacturing has a substantial positive financial impact on the economy: employment, investment in R&D and exports. These apply across all spatial levels. By calculating the financial value of selecting the domestic manufacturer in a public procurement contract and deducting it from the tender price, procurement officials can make a more informed comparison between options. Unlike simplistic margins of preference, which are not financially justified (Sorte Junior, 2015) nor theoretically robust, the framework presented in this paper takes overlooked financial impacts and internalises them into the procurement process. This works within trade agreements, unbinds decisions which favour a nominally higher cost domestic manufacturer from protectionist labels and gives policymakers confidence when determining whether to purchase domestic or foreign produced goods in the advanced manufacturing context. Effective internalisation of broader financial benefits in advanced manufacturing purchases has significant implications for the generation of employment, development of key technologies, strengthening of trade balances and alleviation of spatial disparities. A comparison of public procurement approaches, including the revised framework, are presented in Figure 2. Please note that the definition of a "foreign producer" varies between jurisdictions. It can refer to an overseas entity, an entity in a different state (e.g. A company based in Victoria bidding for a NSW Government contract may be classified as foreign) or an entity outside of a region or local government area.

⁴ Service activities that used to be conducted "in house" at manufacturing firms are commonly outsourced.

Figure 2. Comparison of public procurement frameworks.



The framework developed in this paper does not attempt to account for everything. While social and environmental objectives are valuable and deserve consideration, their unaccounted inclusion risks insufficient competition and gaming by bidders alongside greater opposition from entrenched schools of thought embedded within finance departments (Foray et al., 2012). For example, the US Buy America Act has been criticised for increasing the cost of rail rolling stock by over 30 per cent without developing a sustainable domestic or export industry (Rossetti, Varas, & Fernandez, 2017; Whiting, 2017). Ideally, future public procurement frameworks will integrate the contributions of this paper with new and existing approaches for weighting social and environmental factors. The influence of foreign government policy on market efficiency, though moderated by the proposed framework’s ability to capture broader financial benefits, is not fully compensated. As the example of CRRC in the rail rolling stock industry reflected, additional adjustments may be necessary to counter mercantilist policies by foreign governments.

The challenge with a wide range of appraisal frameworks and standard economic theory are their inherent bias towards prosperous regions. It is presumed that growth is best achieved through the support of productive agglomerations which offset weaknesses in other regions (Combes, Duranton, Gobillon, Puga, & Roux, 2012; Glaeser, 2013). This logic has been criticised for reinforcing spatial inequalities (Iammarino, Rodriguez-Pose, & Storper, 2019). In an analysis of transport infrastructure projects in the UK, Coyle and Sensier (2020) argue that the cost-benefit analysis (CBA) methods employed in the Green Book overlook structural change and favour prosperous regions. While conventional CBA effectively captures the value of incremental projects, it is not designed to encapsulate the impact of structural changes arising from government decisions, including procurement (Metro Dynamics, 2018). Notwithstanding, deviation towards more dynamic impacts makes the business cases of politically charged projects more vulnerable to manipulation (Coyle & Sensier, 2020; Forth, 2017).

Our framework goes a long way towards alleviating some of these challenges. Lagging regions, by definition, are likely to exhibit weaker numbers on employment, R&D investment, and exports. As a result, public procurement which stimulates advanced manufacturing activity in a poor performing region is likely to have a stronger effect. This is due to the influence of marginal impact. Providing a government contract to a region with above average unemployment, particularly when the contract aligns with surplus skills, is likely to create more additional jobs than a contract to an area which has low prevailing rates of unemployment.⁵ It is also likely to keep costs lower as there is less competition for the same skillsets. For example, when the UK Department for Transport awarded the Crossrail rolling stock contract to Bombardier in Derby (February 2014), the fact that Derby's unemployment rate of 8.4 per cent exceeded the national rate of 7.4 per cent would increase the likelihood that additional jobs were being created/sustained.⁶ The same logic applies to R&D investment and export generation. Therefore, by taking these broader financial effects into account, the conceptual framework developed in this paper implicitly favours lagging, as opposed to, prosperous regions. While not the focus, pockets of world leading industrial clusters are still supported by our proposed procurement framework. Their greater efficiency and depth of capabilities are likely to be reflected in disproportionately strong R&D investment and future export generation when they receive government orders. This will partially offset the lower marginal impact of awarding contracts to firms in prosperous regions or localities.⁷

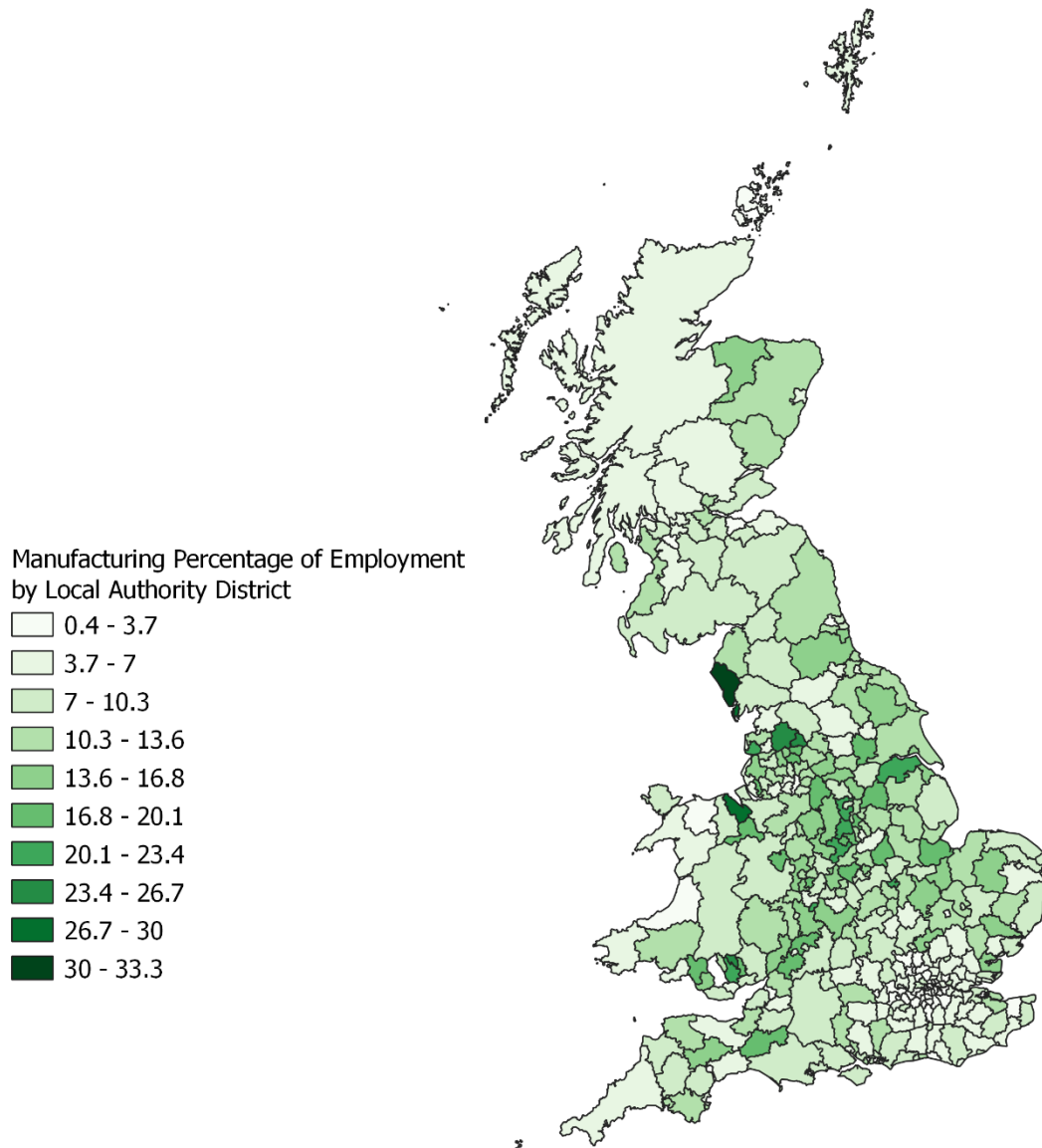
Advanced manufacturing generates significant underestimated financial effects, with Barzotto and De Propris (2018) finding a link between smart workers, those employed in advanced manufacturing and knowledge-based production support activities, and regional gross value added (GVA). Manufacturing is also generally located outside of financial centres. This makes the sector's success a key ingredient in the achievement of spatial rebalancing. By taking a snapshot of manufacturing employment share in Great Britain (from April 2019), it is evident that public procurement which bolsters the manufacturing sector will have a positive spatial effect. Manufacturing's share of employment in Greater London and its adjoining local authorities are generally in the low single digits. As Figure 3 illustrates, manufacturing's share of employment lifts as you head further away from Greater London with the strongest concentrations found in the Midlands and North of England.

⁵ Skills mismatch is a significant challenge across UK regions (Sevinc et al., 2020).

⁶ If employment is being poached, the financial benefit is subdued.

⁷ World-leading industrial clusters can be located in regions which are otherwise performing poorly.

Figure 3. Manufacturing share of employment by local authority district in Great Britain (April 2019).



Source: Own analysis using data from the UK Office for National Statistics; Business Register and Employment Survey.

5.0 Implementation

Following the COVID-19 pandemic, calls for greater use of government procurement to achieve secondary policy goals have strengthened. In NSW Australia, local businesses and the state opposition have lifted pressure on the government to purchase locally produced goods and reinstate a local content/manufacturing requirement (McCallum, 2020). Concurrently, US President Joe Biden has directed the Federal Government to increase its purchases of domestically made goods by broadening the scope of the Buy America Act (CBS, 2021).⁸ While sentiment to strengthen domestic industry exists, tension concerning the

⁸ Includes lifting the threshold on the additional cost the government is willing to pay to support a domestic producer, tightening up on exemptions and stipulating greater US content.

scope and scale of government intervention remains heavily contested. Citing the “folly” of nationalisation, Australian Industry Minister Karen Andrews stated that any growth in manufacturing should be business rather than government led (Hewett, 2020). Furthermore, fiscal constraints across all levels of government limit willingness by leaders to incorporate secondary objectives into procurement.

Section 4 introduces a revised procurement framework which seeks to broaden the scope and efficacy of public procurement without sacrificing the value of competitive markets. This alleviates theoretical and practical tension, especially in periods of austerity, by providing guidance within what is undeniably a complex, contradictory and messy public procurement environment (Schapper Paul, Veiga Malta João, & Gilbert Diane, 2006). Notwithstanding, actual implementation of the conceptual framework presented in this paper is constrained by a combination of incentive structures (Boardman & Vining, 2012), information asymmetry, bounded rationality (Dale-Clough, 2015) and path dependency (Pierson, 2000; Thurbon, 2015). Incorporating broader financial effects into decisions requires high-level technical skills and time which is often lacking within poorly resourced procurement departments (Lawther & Martin, 2005). This is a particular problem at the local level (Dale-Clough, 2015) where Pickernell et al. (2011) find that purchases by local authorities tend to lack the scale and sophistication required to generate supplier innovation. In a study of Baltic city authorities, Lember et al. (2010) support these findings citing the reliance of sub-national buyers on national level regulations and financing alongside greater exposure to corruption and rent seeking.

Although, public procurement for innovation is hampered at a local level, the framework developed in this paper can be applied at broader levels. Keeping with the theme of rail rolling stock manufacturing, it is possible to observe how purchases are made at the city/regional, state, and national levels. When Washington Metro began the purchase of 8000 series railcars in 2018, it provided incentives for bidders to establish an assembly plant within the local region. While local benefits from advanced manufacturing need not be extravagant, estimation of the financial benefits derived from local assembly would benefit from comparison with the additional cost incurred. This would enable authorities to determine what forms of benefits are most sustainable and valuable to a particular region. For instance, the popularity of specifying local assembly may be blinding regional, state, and national authorities from supporting the development of component manufacturers that can become a valuable part of the global supply chain.⁹ Naturally, as the level and spatial reach of government increases, the scope of what is possible can be scaled up. Thurbon (2016) provides an interesting discussion of how South Korea has used strategic procurement at a national level to commercialise locally developed technology, substitute imports, finance strategic industrial expansion and transform SMEs into major suppliers in global value chains.

It is important to acknowledge that the framework presented in this paper is unlikely to apply to every local authority. While innovations in advanced manufacturing have allowed niche producers to emerge, scale is expected to remain an issue. This paper makes the conceptual argument that when authorities are making purchases of advanced manufacturing equipment,

⁹ Making components is generally more valuable and high-tech than assembly. For example, many products that are “made in Mexico” are merely assembled there and include significant US componentry (Wilson & Wood, 2016).

incorporation of previously overlooked financial benefits will result in decisions which are more reflective of value. As this will likely result in more contracts being awarded domestically, enhanced procurement within existing frameworks will achieve broader policy goals previously thought incompatible with least-cost procurement. Our conceptual model represents a significant advance over arbitrary approaches such as the Buy America Act used by the US Federal Government which requires domestically manufactured goods to be procured unless the cost exceeds the foreign bid by 25 per cent (Rossetti et al., 2017). By estimating the financial value of procuring domestically and using this as the basis for adjustment, our model may support premiums in excess of 25 per cent yet does so in a manner which keeps bidders competitive. Given the broader mandate and financial and administrative powers of national level governments, our framework would benefit from coordination between government agencies and levels of government. It is important for higher levels of government to comprehend the broader financial benefits that may be available through domestic procurement and be prepared to make up shortfalls incurred by the adoption of this framework by state, regional and local authorities.

Going forward, the framework proposed in this paper will be tested through an examination of government purchases in the rail rolling stock industry. This will enable refinement of the parameters through which higher nominal cost domestic procurement is financially justified across multiple levels of government.

6.0 Conclusion

Overall, this paper seeks to resolve theoretical and practical tension between free market and policy driven procurement by drawing on the special case of advanced manufacturing. The advanced manufacturing sector generates several underestimated financial effects which, if incorporated into appraisal frameworks, have the potential to direct contracts domestically without contravening free trade principles and multilateral agreements. Unlike margins of preference and policy-based initiatives such as “new municipalism”, acknowledgement of broader financial effects generates a robust approach which ensures that bidders remain subject to market discipline. This is likely to result in a positive spatial rebalancing effect for two reasons: (i) manufacturing activity is generally located outside of financial centres and (ii) the value of underestimated financial effects is likely to be greatest in lagging regions.

7.0 References

- Alhola, K., Ryding, S.-O., Salmenperä, H., & Busch, N. J. (2019). Exploiting the Potential of Public Procurement: Opportunities for Circular Economy. *Journal of Industrial Ecology*, 23(1), 96-109. doi:<https://doi.org/10.1111/jiec.12770>
- Anderson, R., Kovacic, W., & Muller, A. (2012). Ensuring integrity and competition in public procurement markets: a dual challenge for good governance. In UNOPS (Ed.), *United Nations Office for Project Services (UNOPS) Transparency and public procurement, Supplement to the 2011 Annual Statistical Report on United Nations Procurement* (pp. 9-11).
- Andreoni, A. (2016). Varieties of Industrial Policy: Models, Packages and Transformation Cycles. In A. Norman & J. Stiglitz (Eds.), *Efficiency, Finance and Varieties of Industrial Policy*. New York: Columbia University Press.
- Andreoni, A., & Chang, H.-J. (2016a). Bringing production and employment back into development: Alice Amsden’s legacy for a new developmentalist agenda. *Cambridge Journal of Regions, Economy and Society*, 10(1), 173-187. doi:10.1093/cjres/rsw029
- Andreoni, A., & Chang, H.-J. (2016b). Industrial policy and the future of manufacturing. *Economia e Politica Industriale*, 43(4), 491-502. doi:10.1007/s40812-016-0057-2

- Arrowsmith, S. (2003). *Government Procurement in the WTO*. The Hague: Kluwer Law International.
- Atkinson, R. (2019). *Testimony of Robert D. Atkinson President Information Technology and Innovation Foundation Before the Senate Small Business Committee Hearing on "Made in China 2025 and the Future of American Industry"*. Retrieved from Washington D.C.:
- Bailey, D., & De Propris, L. (2014). Manufacturing reshoring and its limits: the UK automotive case. *Cambridge Journal of Regions, Economy and Society*, 7(3), 379-395. doi:10.1093/cjres/rsu019
- Bailey, D., Glasmeier, A., Tomlinson, P. R., & Tyler, P. (2019). Industrial policy: new technologies and transformative innovation policies? *Cambridge Journal of Regions, Economy and Society*, 12(2), 169-177. doi:10.1093/cjres/rsz006
- Bailey, D., Pitelis, C., & Tomlinson, P. R. (2018). A place-based developmental regional industrial strategy for sustainable capture of co-created value. *Cambridge journal of economics*, 42(6), 1521-1542. doi:10.1093/cje/bey019
- Bailey, D., Pitelis, C., & Tomlinson, P. R. (2020). Strategic management and regional industrial strategy: cross-fertilization to mutual advantage. *Regional Studies*, 54(5), 647-659. doi:10.1080/00343404.2019.1619927
- Bailey, D., & Tomlinson, P. R. (2017). Back to the future? UK industrial policy after the great financial crisis. In *Economic policies since the global financial crisis* (pp. 221-263): Springer.
- Baldus, B. J., & Hatton, L. (2020). U.S. chief procurement officers' perspectives on public procurement. *Journal of Purchasing and Supply Management*, 26(1), 100538. doi:<https://doi.org/10.1016/j.pursup.2019.05.003>
- Barca, F., McCann, P., & Rodríguez-Pose, A. (2012). THE CASE FOR REGIONAL DEVELOPMENT INTERVENTION: PLACE-BASED VERSUS PLACE-NEUTRAL APPROACHES*. *Journal of Regional Science*, 52(1), 134-152. doi:<https://doi.org/10.1111/j.1467-9787.2011.00756.x>
- Bartlett, W. (2014). *Shut Out? South East Europe and the EU's New Industrial Policy*. LSE 'Europe in Question' Discussion Paper Series. London School of Economics. Retrieved from <http://www.lse.ac.uk/europeanInstitute/LEQS%20Discussion%20Paper%20Series/LEQSPaper84.pdf>
- Barzotto, M., & De Propris, L. (2018). Skill up: smart work, occupational mix and regional productivity. *Journal of Economic Geography*, 19(5), 1049-1075. doi:10.1093/jeg/lby050
- Berger, M. (2013). *Making in America*. Cambridge, Massachusetts: MIT Press.
- Bivens, J. (2019). *Updated employment multipliers for the U.S. economy*. Economic Policy Institute. Retrieved from <https://www.epi.org/publication/updated-employment-multipliers-for-the-u-s-economy/>
- Bleda, M., & Chicot, J. (2020). The role of public procurement in the formation of markets for innovation. *Journal of Business Research*, 107, 186-196. doi:<https://doi.org/10.1016/j.jbusres.2018.11.032>
- Blyth, M. (2013). *Austerity: The history of a dangerous idea*: Oxford University Press.
- Boardman, A. E., & Vining, A. R. (2012). THE POLITICAL ECONOMY OF PUBLIC-PRIVATE PARTNERSHIPS AND ANALYSIS OF THEIR SOCIAL VALUE*. *Annals of Public and Cooperative Economics*, 83(2), 117-141. doi:10.1111/j.1467-8292.2012.00457.x
- Branco, F. (1994). Favoring domestic firms in procurement contracts. *Journal of International Economics*, 37(1), 65-80. doi:[https://doi.org/10.1016/0022-1996\(94\)90025-6](https://doi.org/10.1016/0022-1996(94)90025-6)
- Brotherton-Brunch, E. (2020). Problems Continue for Rail Cars Built by China's State-Owned CRRC for Boston's Subway System. Retrieved from <https://www.americanmanufacturing.org/blog/problems-continue-for-rail-cars-built-by-chinas-state-owned-crrc-for-bostons-subway-system/>
- CBS. (2021). Biden orders government to buy from U.S. manufacturers. Retrieved from <https://www.cbsnews.com/news/government-buy-us-manufacturers-biden-order/>
- Centre for Local Economic Strategies. (2017). Community wealth building through anchor institutions. Centre for Local Economic Strategies. Retrieved from

<https://cles.org.uk/blog/progressing-community-wealth-building-through-anchor-institutions/>

- Chang, H.-J., Andreoni, A., & Kuan, M. (2013). *International Industrial Policy Experiences and the Lessons for the UK*. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/277162/ep4-international-industrial-policy-experiences.pdf
- Cimoli, M., Dosi, G., & Stiglitz, J. (2009). *Industrial Policy and Development: The Political Economy of Capabilities Accumulation*. Oxford: Oxford University Press.
- Combes, P. P., Duranton, G., Gobillon, L., Puga, D., & Roux, S. (2012). The productivity advantages of large cities: Distinguishing agglomeration from firm selection. *Econometrica*, 80(6), 2543-2594.
- Coyle, D., & Sensier, M. (2020). The imperial treasury: appraisal methodology and regional economic performance in the UK. *Regional Studies*, 54(3), 283-295. doi:10.1080/00343404.2019.1606419
- Cypher, J. M., & Dietz, J. L. (1998). Static and Dynamic Comparative Advantage: A Multi-Period Analysis with Declining Terms of Trade. *Journal of Economic Issues*, 32(2), 305-314. doi:10.1080/00213624.1998.11506035
- Dale-Clough, L. (2015). Public procurement of innovation and local authority procurement: procurement modes and framework conditions in three European cities. *Innovation: The European Journal of Social Science Research*, 28(3), 220-242. doi:10.1080/13511610.2015.1012709
- De Loecker, J. (2007). Do exports generate higher productivity? Evidence from Slovenia. *Journal of International Economics*, 73(1), 69-98. doi:<https://doi.org/10.1016/j.jinteco.2007.03.003>
- De Loecker, J. (2013). Detecting Learning by Exporting. *American Economic Journal: Microeconomics*, 5(3), 1-21. doi:10.1257/mic.5.3.1
- Department of Finance. (2019). *Commonwealth Procurement Rules*. Canberra: Australian Government
- Edler, J., & Georghiou, L. (2007). Public procurement and innovation—Resurrecting the demand side. *Research Policy*, 36(7), 949-963. doi:<https://doi.org/10.1016/j.respol.2007.03.003>
- Edler, J., & Yeow, J. (2016). Connecting demand and supply: The role of intermediation in public procurement of innovation. *Research Policy*, 45(2), 414-426. doi:<https://doi.org/10.1016/j.respol.2015.10.010>
- Edquist, C., & Zabala-Iturriagoitia, J. M. (2012). Public Procurement for Innovation as mission-oriented innovation policy. *Research Policy*, 41(10), 1757-1769. doi:<https://doi.org/10.1016/j.respol.2012.04.022>
- Elliot, L. (2013). March of the makers? Balance of payment figures make dismal reading. *The Guardian*. Retrieved from <https://www.theguardian.com/business/economics-blog/2013/mar/27/george-osborne-balance-payment-dismal-reading>
- Evenett, S. J., & Hoekman, B. M. (2005). Government procurement: market access, transparency, and multilateral trade rules. *European Journal of Political Economy*, 21(1), 163-183. doi:<https://doi.org/10.1016/j.ejpoleco.2004.01.001>
- Foray, D. (2014). *Smart Specialisation: Opportunities and Challenges for Regional Innovation Policy*. London: Routledge.
- Foray, D., Goddard, J., Beldarrain, X., Landabaso, M., McCann, P., Morgan, K., . . . Ortega-Argilés, R. (2012). *Guide to Research and Innovation Strategies for Smart Specialisation (RIS3)*. Retrieved from Brussels:
- Foresight. (2013). *The Future of Manufacturing: a New Era of Opportunity and Challenge for the UK*. HM Government
- Forth, T. (2017). Investment is Political BCRs might as well be bullshit. Retrieved from <https://tomforth.co.uk/investmentispolitical/#:~:text=Investment%20is%20indeed%20politi>

[cal%2C%20but%20Manchester%20is%20far,been%20a%20spectacular%20beneficiary%20above%20other%20competing%20cities.](#)

- Frenken, K. (2017). A complexity-theoretic perspective on innovation policy. *Complex Innovation Policy*, 3(1), 35-47. doi:<http://dx.doi.org/10.20377/cgn-41>
- Friedman, T., & Mandelbaum, M. (2011). *That used to be us: How America fell behind in the world it invented and how we can come back*. New York: Farrar, Straus and Giroux.
- Friedman, T. L. (2005). *The World is Flat: A brief history of the twenty-first century*: Farrar, Straus and Giroux New York.
- Fuller, D., & Geide-stevenson, D. (2003). Consensus Among Economists: Revisited. *The Journal of Economic Education*, 34(4), 369-387. doi:10.1080/00220480309595230
- Georghiou, L., Edler, J., Uyarra, E., & Yeow, J. (2014). Policy instruments for public procurement of innovation: Choice, design and assessment. *Technological Forecasting and Social Change*, 86, 1-12. doi:<https://doi.org/10.1016/j.techfore.2013.09.018>
- Geroski, P. A. (1990). Procurement policy as a tool of industrial policy. *International Review of Applied Economics*, 4(2), 182-198. doi:10.1080/758523673
- Glaeser, E. L. (2013). Triumph of the city: How our greatest invention makes us richer, smarter, greener, healthier, and happier (an excerpt). *Journal of Economic Sociology*, 14(4), 75-94.
- Glaeser, E. L., & Gottlieb, J. D. (2009). The Wealth of Cities: Agglomeration Economies and Spatial Equilibrium in the United States. *Journal of Economic Literature, American Economic Association*, 47(4), 983-1028.
- Glaeser, E. L., & Kohlhase, J. E. (2004). Cities, regions and the decline of transport costs*. *Papers in Regional Science*, 83(1), 197-228. doi:10.1007/s10110-003-0183-x
- Glasmeier, A., Martin, R., Tyler, P., & Dorling, D. (2008). Editorial: Poverty and place in the UK and the USA. *Cambridge Journal of Regions, Economy and Society*, 1(1), 1-16. doi:10.1093/cjres/rsn004
- Grillitsch, M., Hansen, T., Coenen, L., Miorner, J., & Moodysson, J. (2019). Innovation policy for system-wide transformation: The case of strategic innovation programmes (SIPs) in Sweden. *Research Policy*, 48(4), 1048-1061. doi:<https://doi.org/10.1016/j.respol.2018.10.004>
- Gruber, J., & Johnson, S. (2019). *Jump-Starting America: How Breakthrough Science Can Revive Economic Growth and the American Dream*. New York: Public Affairs.
- Haldane, A. (2017). Productivity Puzzles [Press release]. Retrieved from <https://www.bankofengland.co.uk/speech/2017/productivity-puzzles>
- Hamilton Project. (2018). *Place-Based Policies for Shared Economic Growth*. Retrieved from Washington DC: https://www.hamiltonproject.org/papers/place_based_policies_for_shared_economic_growth
- Hauge, J., & O'Sullivan, E. (2019). *Inside the black box of manufacturing: conceptualising and counting manufacturing in the economy*. Retrieved from
- Hauser, H. (2014). *Review of the Catapult Network: Recommendations on the Future Shape, Scope and Ambition of the Programme*. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/368416/bis-14-1085-review-of-the-catapult-network.pdf
- Hayes, R. H., & Wheelwright, S. C. (1984). *Restoring our competitive edge: competing through manufacturing* (Vol. 8): Wiley New York.
- HCMTF. (2017). *High Capacity Metro Trains Project Project Summary – February 2017*. Melbourne: Victorian State Government
- Helper, S., Krueger, T., & Wial, H. (2012). Why does manufacturing matter? Which manufacturing matters? *Metropolitan Policy Program paper*, 1-53.
- Hewett, J. (2020). Is 'made in Australia' just misguided nationalism? . *Australian Financial Review*. Retrieved from <https://www.afr.com/companies/manufacturing/traps-in-making-australia-make-things-again-20200520-p54uul>

- HM Government. (2018). *Public Procurement Policy*. HM Government Retrieved from <https://www.gov.uk/guidance/public-sector-procurement-policy>
- Horowitz, J. M., Igielnik, R., & Kochhar, R. (2020). Trends in Income and Wealth Inequality. Retrieved from <https://www.pewsocialtrends.org/2020/01/09/trends-in-income-and-wealth-inequality/>
- Iammarino, S., Rodriguez-Pose, A., & Storper, M. (2019). Regional inequality in Europe: evidence, theory and policy implications. *Journal of Economic Geography*, 19(2), 273-298. doi:10.1093/jeg/lby021
- Jaehrling, K. (2014). The state as a 'socially responsible customer'? Public procurement between market-making and market-embedding. *European Journal of Industrial Relations*, 21(2), 149-164. doi:10.1177/0959680114535316
- Kattel, R., & Lember, V. (2010). Public procurement as an industrial policy tool: An option for developing countries? *Journal of Public Procurement*, 10(3), 368-404. doi:10.1108/JOPP-10-03-2010-B003
- Ketokivi, M., & Ali-Yrkkö, J. (2009). Unbundling R&D and Manufacturing: Postindustrial Myth or Economic Reality? *Review of Policy Research*, 26, 35-54. doi:10.1111/j.1541-1338.2008.00368.x
- Keulemans, S., & Van de Walle, S. (2017). Cost-effectiveness, domestic favouritism and sustainability in public procurement: A comparative study of public preferences. *International Journal of Public Sector Management*, 30(4), 328-341. doi:10.1108/IJPSM-10-2016-0169
- Larose, E. (2020). UNDERSTANDING AMERICA'S GROWING SPATIAL INEQUALITY. Retrieved from <http://gppreview.com/2020/02/28/understanding-americas-growing-spatial-inequality/>
- Lawther, W. C., & Martin, L. L. (2005). Innovative practices in public procurement partnerships: The case of the United States. *Journal of Purchasing and Supply Management*, 11(5), 212-220. doi:<https://doi.org/10.1016/j.pursup.2005.12.003>
- Lember, V., Kalvet, T., & Kattel, R. (2010). Urban Competitiveness and Public Procurement for Innovation. *Urban Studies*, 48(7), 1373-1395. doi:10.1177/0042098010374512
- Lin, J., & Chang, H.-J. (2009). Should Industrial Policy in Developing Countries Conform to Comparative Advantage or Defy it? A Debate Between Justin Lin and Ha-Joon Chang. *Development Policy Review*, 27(5), 483-502. doi:10.1111/j.1467-7679.2009.00456.x
- Loader, K. (2013). Is Public Procurement a Successful Small Business Support Policy? A Review of the Evidence. *Environment and Planning C: Government and Policy*, 31(1), 39-55. doi:10.1068/c1213b
- MacFarlane, R., & Cook, M. (2008). *Community benefit in public procurement: a report demonstrating the methodology for including targeted recruitment and training clauses in public sector contracts*. Edinburgh: Scottish Government
- Manuel, K. (2016). *The Buy American Act – Preference for “Domestic” Supplies: In Brief*. Washington D.C
- Marques, P., & Morgan, K. (2018). The Heroic Assumptions of Smart Specialisation: A Sympathetic Critique of Regional Innovation Policy. In A. Isaksen, R. Martin, & M. Trippel (Eds.), *New Avenues for Regional Innovation Systems - Theoretical Advances, Empirical Cases and Policy Lessons* (pp. 275-293). Cham: Springer International Publishing.
- Martin, R., Pike, A., Tyler, P., & Gardiner, B. (2016). Spatially Rebalancing the UK Economy: Towards a New Policy Model? *Regional Studies*, 50(2), 342-357. doi:10.1080/00343404.2015.1118450
- Martin, R., Sunley, P., Tyler, P., & Gardiner, B. (2016). Divergent cities in post-industrial Britain. *Cambridge Journal of Regions, Economy and Society*, 9(2), 269-299. doi:10.1093/cjres/rsw005
- McAfee, R. P., & McMillan, J. (1989). Government procurement and international trade. *Journal of International Economics*, 26(3), 291-308. doi:[https://doi.org/10.1016/0022-1996\(89\)90005-6](https://doi.org/10.1016/0022-1996(89)90005-6)
- McCallum, J. (2020). Businesses call for NSW Government to award contracts locally during COVID-19. *The Daily Telegraph*. Retrieved from

<https://www.dailytelegraph.com.au/newslocal/businesses-call-for-nsw-government-to-award-contracts-locally-during-covid19/news-story/99be370dd3784fb515d18f203fdc58c0>

- McCann, B. T., & Folta, T. B. (2008). Location Matters: Where We Have Been and Where We Might Go in Agglomeration Research. *Journal of Management*, 34(3), 532-565. doi:10.1177/0149206308316057
- Menor, L. J., Kristal, M. M., & Rosenzweig, E. D. (2007). Examining the Influence of Operational Intellectual Capital on Capabilities and Performance. *Manufacturing & Service Operations Management*, 9(4), 559-578. doi:10.1287/msom.1060.0131
- Metro Dynamics. (2018). *Investing in the Future*. Retrieved from London and Manchester:
- Mills, J., Platts, K., & Bourne, M. (2003). Applying resource-based theory: Methods, outcomes and utility for managers. *International Journal of Operations & Production Management*, 23(2), 148-166. doi:10.1108/01443570310458429
- Morettini, S. (2011). Public procurement and secondary policies in EU and global administrative law. In E. Chiti & B. G. Mattarella (Eds.), *Global Administrative Law and EU Administrative Law* (pp. 93-118). Berlin and Heidelberg: Springer-Verlag.
- Morgan, K. (2017). Nurturing novelty: Regional innovation policy in the age of smart specialisation. *Environment and Planning C: Politics and Space*, 35(4), 569-583.
- Morgan, K. (2019). 7. The future of place-based innovation policy (as if 'lagging regions' really mattered). *Regional Studies Policy Impact Books*, 1(2), 79-89. doi:10.1080/2578711X.2019.1621103
- Nolan, P. (2004). Shaping the future: the political economy of work and employment. *Industrial Relations Journal*, 35(5), 378-387. doi:10.1111/j.1468-2338.2004.00321.x
- NSW Treasury. (2020). *NSW Procurement Policy Framework*. Sydney: NSW Government Retrieved from https://buy.nsw.gov.au/_data/assets/pdf_file/0007/728764/200401-Procurement-Policy-Framework_Final-v1_4-Full.pdf
- O'Neill, M. (2016). The road to socialism is the A59: the Preston model. *Renewal: a Journal of Labour Politics*, 24(2), 69.
- OECD. (2011). *Demand-side innovation policies*. Retrieved from Paris: <http://www.oecd.org/sti/inno/demand-sideinnovationpolicies.htm>
- OECD. (2019). Public Procurement. Retrieved from <https://www.oecd.org/gov/public-procurement/>
- OECD. (2020). Industrial Production. Retrieved from <https://data.oecd.org/industry/industrial-production.htm>
- ONS. (2015). What is the Productivity Puzzle? . Retrieved from <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/labourproductivity/articles/whatistheproductivitypuzzle/2015-07-07>
- Pickernell, D., Kay, A., Packham, G., & Miller, C. (2011). Competing Agendas in Public Procurement: An Empirical Analysis of Opportunities and Limits in the UK for SMEs. *Environment and Planning C: Government and Policy*, 29(4), 641-658. doi:10.1068/c10164b
- Picketty, T. (2011). *Capital in the Twenty-First Century*. Boston: Harvard University Press.
- Pierson, P. (2000). Increasing Returns, Path Dependence, and the Study of Politics. *American Political Science Association*, 94, 251-267. doi:10.2307/2586011
- Pisano, G. P., & Shih, W. C. (2009). Restoring american competitiveness. *Harvard business review*, 87(7/8), 114-125.
- Pisano, G. P., & Shih, W. C. (2012a). Does America really need manufacturing. *Harvard business review*, 90(3), 94-102.
- Pisano, G. P., & Shih, W. C. (2012b). *Producing prosperity: Why America needs a manufacturing renaissance*: Harvard Business Press.
- Pitelis, C. (2015). DIP-ly speaking: debunking ten myths, and a business strategy-informed developmental industrial policy. In D. Bailey, K. Cowling, & P. R. Tomlinson (Eds.), *New Perspectives on Industrial Policy for a Modern Britain* (pp. 17-40). Oxford: Oxford University Press.

- Public Administration Select Committee - Minutes of Evidence HC 123*, (2013).
- Ricardo, D. (1817). *On the Principles of Political Economy and Taxation*. England: John Murray.
- Ringer, S. (2020). Can we build it? Yes, we can: How Australia can become a global manufacturing hub. Retrieved from <https://www.sydney.edu.au/news-opinion/news/2020/08/04/can-we-build-it--yes--we-can.html>
- Roessner, J. D. (1979). The local government market as a stimulus to industrial innovation. *Research Policy*, 8(4), 340-362. doi:[https://doi.org/10.1016/0048-7333\(79\)90002-7](https://doi.org/10.1016/0048-7333(79)90002-7)
- Rossetti, P., Varas, J., & Fernandez, B. (2017). Buy America Regulations May Raise Cost of Subsidized Infrastructure. Retrieved from <https://www.americanactionforum.org/research/buy-america-regulations-may-raise-cost-subsidized-infrastructure/>
- Rothwell, R. (1984). Technology-Based Small Firms and Regional Innovation Potential: The Role of Public Procurement. *Journal of Public Policy*, 4(4), 307-332. Retrieved from <http://www.jstor.org/stable/3998373>
- Rowe, J., Peredo, A. M., Sullivan, M., & Restakis, J. (2017). Co-operative Development, Policy, and Power in a Period of Contested Neoliberalism: The Case of Evergreen Co-operative Corporation in Cleveland, Ohio. *Socialist Studies/Études Socialistes*, 12(1), 54-54.
- Rowthorn, R., & Coutts, K. (2013). *De-industrialisation and the balance of payments in advanced economies*. Centre for Business Research. Faculty of Economics, University of Cambridge.
- Schapper Paul, R., Veiga Malta João, N., & Gilbert Diane, L. (2006). An analytical framework for the management and reform of public procurement. *Journal of Public Procurement*, 6(1/2), 1-26. doi:10.1108/JOPP-06-01-02-2006-B001
- Sevinc, D., Green, A., Bryson, J. R., Collinson, S., Riley, R., & Adderley, S. (2020). Ensuring skills are available in the right locations: are we there yet? A regional analysis of qualification gaps. *Regional Studies*, 54(8), 1149-1159. doi:10.1080/00343404.2020.1740190
- Shoch, J. (2001). *Trading blows: Party competition and US trade policy in a globalizing era*: Univ of North Carolina Press.
- Smith, A. (1776). *An Inquiry into the Nature and Causes of the Wealth of Nations*. London: Strahan and Cadell.
- Sorte Junior, W. F. (2015). Nurturing domestic firms through public procurement: A comparison between Brazil and Japan. *Public Policy and Administration*, 31(1), 29-50. doi:10.1177/0952076715603444
- Spring, M., Hughes, A., Mason, K., & McCaffrey, P. (2017). Creating the competitive edge: A new relationship between operations management and industrial policy. *Journal of Operations Management*, 49-51, 6-19. doi:<https://doi.org/10.1016/j.jom.2016.12.003>
- Thurbon, E. (2015). The abandonment of procurement-linked strategic activism in Australia: standing still with room to move. *Australian Journal of International Affairs*, 69(5), 577-594. doi:10.1080/10357718.2015.1048780
- Thurbon, E. (2016). Trade agreements and the myth of policy constraint in Australia. *Australian Journal of Political Science*, 51(4), 636-651. doi:10.1080/10361146.2016.1239569
- UNIDO. (2020). Manufacturing Data Base. Retrieved from <https://stat.unido.org/database/MVA%202020,%20Manufacturing>. from United Nations Industrial Development Organisation <https://stat.unido.org/database/MVA%202020,%20Manufacturing>
- Uyarra, E., & Flanagan, K. (2010). Understanding the Innovation Impacts of Public Procurement. *European Planning Studies*, 18(1), 123-143. doi:10.1080/09654310903343567
- Uyarra, E., Zabala-Iturriagoitia, J. M., Flanagan, K., & Magro, E. (2020). Public procurement, innovation and industrial policy: Rationales, roles, capabilities and implementation. *Research Policy*, 49(1), 103844. doi:<https://doi.org/10.1016/j.respol.2019.103844>
- VIC. (2020). Social Procurement – Victorian Government Approach. Victorian Government. Retrieved from <https://www.buyingfor.vic.gov.au/social-procurement-victorian-government-approach>
- VIC. (2021). *REASONS WHY COUNCILS MAY SUPPORT SOCIAL PROCUREMENT*. Retrieved from

- Warwick, K. (2013). Beyond Industrial Policy. doi:doi:<https://doi.org/10.1787/5k4869clw0xp-en>
- Whiting, T. (2017). *“Buy American” Laws: A Costly Policy Mistake That Hurts Americans*. Retrieved from Washington DC: <https://www.heritage.org/sites/default/files/2017-05/BG3218.pdf>
- Wilson, C., & Wood, D. (2016). Growing Together: Economic Ties between the United States and Mexico. Retrieved from <https://www.wilsoncenter.org/article/growing-together-economic-ties-between-the-united-states-and-mexico>
- WMATA. (2019). *WMATA Supply and Service Contract RFPCQ19038-8K/FRV (8000 Series Trains)*. Retrieved from
- WTO. (2020). Agreement on Government Procurement. Retrieved from https://www.wto.org/english/tratop_e/gproc_e/gp_gpa_e.htm