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An alternative explanation of the rural–urban productivity gap

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Gross Value Added (GVA) per worker is a measure of productivity that has been understood to reflect the efficiency of production. Recent research offers a different interpretation of GVA figures using two-dimensions that calls into question whether urban areas are more productive than rural areas. This chapter summarises the old and this new way of understanding GVA productivity figures and stresses that the sweeping generalisation that rural businesses are less productive than their urban counterparts is profoundly incorrect. After advocating a move away from the old to adopt the new two-dimensional way of understanding GVA productivity figures we stress the need for deeper understanding and a variety of policies to support businesses and entrepreneurs to become more efficient irrespective of their rural or urban location.

JELs: D24; L11; O4

Keywords: Local development; GVA productivity; Prices; Costs; Scale

1. Introduction

The shift in discourse from national to regional to local development is a critical transformation in thinking that puts local ecosystems – including both production and consumption dynamisms – at the forefront of policy analysis and not least for the assistance and guidance of entrepreneurs. This shift in thinking facilitates a judicious amendment to the analytical narrative away from mainstream economic growth models that in the main assume away the presence of power and institutional forces to a contextually focussed comprehension of local development (Pike et al., 2007). We build on Dickens and Melmberg's (2001) perspective that firms are fundamentally and intrinsically spatial and territorial, just like all other forms of social organisation. Once productivity analysis incorporates this shift in thinking to integrate ecosystem dynamics then it no longer ignores the complex interrelationships that exist between firms, consumers, trends, cultures, social norms, and policymakers that exist at all spatial scales.

The standard way of empirically estimating the respective roles of factors that potentially affect the level and change in productivity is to augment a neoclassical (Solow, 1956; Swan, 1956; Mankiw et al., 1992; Knight et al., 1993) or endogenous (Arrow, 1961; Romer, 1990; Schumpeter, 1941) growth model with a variable of choice where the

dependent variable is measured using a transformation of Gross Value Added (GVA)[1] data that exist on a one-dimensional continuum. These approaches have been vehemently dismissed as 'not even wrong' by Filipe and McCombie (2013) most concretely due to the identity issue, and by Paul Samuelson (1966) himself due to a lack of universal validity.

The spotlight on rural entrepreneurship brings into sharp relief the inadequacies of traditional one-dimensional interpretations of GVA. With rural landscapes, productivity becomes one of the central concerns because rural businesses have historically low productivity when compared to those in urban areas (Rizov and Walsh, 2011). However, rural businesses may not have low productivity when viewed through the lens of a more intricate understanding of productivity dynamics (Webber et al., 2009; Curry, 2021). Cumbria Local Enterprise Partnership (2019, p. 12) underscore that "*traditional metrics of economic performance, such as GDP or at a regional level GVA, are a poor guide to social and economic welfare. They also do not tell us anything about how the opportunities and benefits of growth are distributed across different spatial areas and social or income groups*." Some rural businesses, especially those in niche markets, may prioritise maintaining and improving the quality of their products or services over increasing their quantity (Mahroum et al., 2007). For example, using small artisanal cheese producers in rural Switzerland, Blackstock et al. (2022) reveal that these cheese producers focus on crafting high-quality, unique products rather than mass production, which in turn may increase their value added. This example challenges us to reconsider assumptions about GVA productivity measurements and its determinants, recognising the limitations of traditional measures and embracing a more nuanced perspective that reflects both value and quantity of products.

The purpose of this chapter is to offer an alternative explanation of the rural-urban productivity gap as illustrated through the GVA measure. We decompose the GVA measure along the lines suggested by Webber (2016), Webber (2019), Webber and Dymski (2021), and Webber and Huaccha (2023) who compellingly advocate for a paradigm shift towards a two-dimensional (2D) understanding of GVA productivity, which would allow us to consider productivity in terms of both value and quantity as well as other external factors (e.g., digital technology, persuasive advertising, etc.). This paradigm shift becomes crucial in addressing the rural-urban productivity gap and aligns with a broader academic discourse urging for a contextualised comprehension of local development, particularly in rural contexts (Pike et al., 2007). The 2D interpretation of GVA productivity numbers leads to a deeper understanding of how productivity changes, underscores that local and non-local demand and supply forces shape productivity figures, and calls for a wider range of policies to support entrepreneurs and businesses irrespective of their location. It also highlights that a reason for the poor performance of economic growth theories and associated policies to date is that we misunderstand the measure of output due to its one-dimensional form, and that future policies must be grounded on a more solid understanding of the data upon which they are based. We have spent decades misunderstanding the meaning of our GVA productivity measure and therefore recommending inappropriate policy, but if we build on our recent and current knowledge of what this measure actually means, then future policy may be more effective in supporting rural entrepreneurs.

[1] Note that GVA plus taxes minus subsidies equals GDP (Gross Domestic Product). The two-dimensional understanding of this productivity measure has very wide implications at all spatial scales.

2. Productivity as typically understood

Productivity is understood to be the rate that outputs are created given a set of inputs and is an important indicator of the performance of firms and nations. Raising national productivity can improve living standards as it leads to more real income, which improves people's ability to purchase goods and services, enjoy leisure, and invest in housing, education, society, and the environment. Productivity growth helps businesses become more profitable (O'Mahony and Timmer, 2009) and permits more investment in R&D, staff training, or machinery. Productivity is often calculated as the ratio of aggregate output to a single or an aggregate input (such as labour) used in a production process (Sickles and Zelenyuk, 2019) and this ratio, calculated over a specific period, indicates the output per unit of input, with a higher ratio indicating more efficient production. Emphasis rests on the number of units or volume of resources as the indicator of the quantity of inputs and outputs.

Due to the need to compare different production activities across industries, analysts almost always do not use the number of units or the volume of resources, and instead they use market values of inputs and outputs. GVA is a commonly used measure of productivity and reflects the contribution of individual firms, sectors, or countries to local, national, and/or the global economy.[2] As the name suggests, GVA captures the ***value*** of goods and services produced, less the monetary cost of all inputs and raw materials directly attributable to the production process (DEFRA, 2022). In other words, GVA provides a measure of the monetary value that is added to the economy by a particular firm, sector, or national economy. Note that both the volume and value methods of measuring productivity present efficiency on a one-dimensional continuum, where higher numbers reflect greater productive efficiency.[3]

GVA is known to vary significantly across locations within a country due to a range of factors (Webber et al., 2009) and there are spatially idiosyncratic reasons why an area may experience low productivity (Webber et al., 2018). The UK has a well-documented history of productivity disparities across its regions and subregions, including at the local and rural-urban level (Tiwasing et al., 2020), and London has the highest level of GVA compared to other regions and subregions owing to its status as a highly productive global city driven by the financial sector (ONS, 2022). The factors that drive productivity outcomes in rural areas can differ significantly from those in urban areas. For example, rural areas may have limited access to digital infrastructure, services, and markets (Phillipson et al., 2019; Tiwasing, 2021), which can limit firms' ability to scale up production and reduce costs. Additionally, rural areas may face environmental and social challenges that affect productivity outcomes, such as the outmigration of skilled labour to urban areas (Lagakos, 2020). DEFRA's (2022) estimates of GVA levels in 2020 indicate it to be £253bn in predominantly rural English areas, which is significantly lower than the output of predominantly urban areas (£750bn, excluding London) and for London (£470bn). This rural-urban productivity gap is also observed across remote areas, such as Scotland's Highlands and Islands, which face

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[2] There are various definitions of productivity, some not expressed as ratios, and the choice depends on the purpose of measurement and data availability. Differences in how outputs and inputs are aggregated to obtain a ratio-type measure of productivity are a significant source of variation among productivity measures (Sickles and Zelenyuk, 2019). However, a key indicator of productivity used by most governments for interregional and international comparison purposes is GDP or GVA. Subtracting subsidies from and adding taxes to GVA figures gives GDP figures.

[3] For example, many analysts generate a firm-level GVA productivity figures by subtracting the total value of goods and services used up or transformed in the production process (say, 80,000 Euros) from the firm's total revenue (say, 200,000 €) to arrive at a firm-level GVA figure (which in this case would be 120,000 €). This firm-level GVA estimate can then be divided by the number of workers (6 workers) to arrive at an estimate of labour productivity (120,000 / 6 = 20,000 €).

persistent issues of low growth and productivity which is arguable due to the geographical isolation, limited infrastructure, and a low population (Skills Development Scotland, 2022).

Policymakers recognise that it is crucial to implement targeted interventions and investments that address firms' productivity challenges and promote sustainable economic growth across rural and remote areas, but it is not clear ***why*** geographical isolation, limited infrastructure, and low population density limit a firm's ability to increase its productivity and thus what policies would make a tangible and sizable difference to productivity. Indeed, it is trivial to cite policy initiatives that claimed ex ante to be a manna from heaven only for limited or no tangible change to be recognisable ex post. The next section explains why the old, standard, one-dimensional understanding of GVA figures leads to the poor targeting of policies, and why the future understanding of the determinants of productivity and growth ought to build on recent theoretical contributions suggesting that GVA productivity figures should be understood in two dimensions.

3. GVA in 2D

The majority and standard way of estimating the importance of particular factors in enhancing productivity is to estimate a growth model by regressing a range of variables on a preferred productivity measure (typically GVA per worker hour), where each variable is on a one-dimensional continuum perhaps from negative to positive infinity. This analytical path identifies whether higher values of a variable of interest is correlated with higher values of output (or output growth) per worker. But what happens if output (and output growth) should not be interpreted on a one-dimensional continuum?

Webber (2016, 2019), Webber and Dymski (2021), and Webber and Huaccha (2023) content that GVA productivity data are better understood in two-dimensions, as shown in Figure 1. Total revenue is the sum of a firm's receipts from sales, which is the sales price, *S*, multiplied by the number of units sold, *Q*, so the total revenue rectangle is *SAQO*. The market value of a firm's costs of goods or services used up or transformed in the production process is depicted by spreading these costs, *C*, equally across the number of units sold, *Q*, and is the rectangle *CBQO*. GVA figures subtract rectangle *CBQO* from rectangle *SAQO*, so GVA data reflect the size of the ***rectangle*** *SCBA*. Increases in GVA can be achieved by increasing *S*, reducing *C*, or pushing *Q* to the right. Note that *Q* only shifts to the right if customers agree to purchase more output. If this rectangle is size is held fixed but the number of workers is reduced, then GVA per worker, the usual labour productivity measure, will increase.

GVA productivity figures reflect the added value in the production process in monetary terms, which is strongly influenced by demand and supply and not a simple reflection of the efficiency of production. Note different ratios of *H* and *W* can create exactly the same GVA productivity figure, as seen later in figure 4, as it is the *area* of the rectangle that informs us of the level of productivity, and therefore the same GVA can be achieved with different combinations of capital. Even if GVA productivity figures increase between two time periods, this does not necessarily imply that their physical resource use rate has become more efficient (i.e., the ratio of physical inputs to physical outputs), nor does it imply that they have become more environmentally sustainable, as it is possible that a firm chooses to use cheaper and more environmentally unsustainable inputs at the same time as a recordable rise in GVA. Figure 1 illustrates that a firm's GVA productivity figure is shaped not only by the costs of intermediate inputs and the sale price but also by the level of demand, as it co-determines the number of sales, *Q*. This understanding of the way we measure GVA (and hence the level of labour productivity) enables us to progress and identify how local factors influence the level and change of GVA productivity figures and propose a better way

of understanding the challenges of positively influencing the dynamics of an area's growth rate.

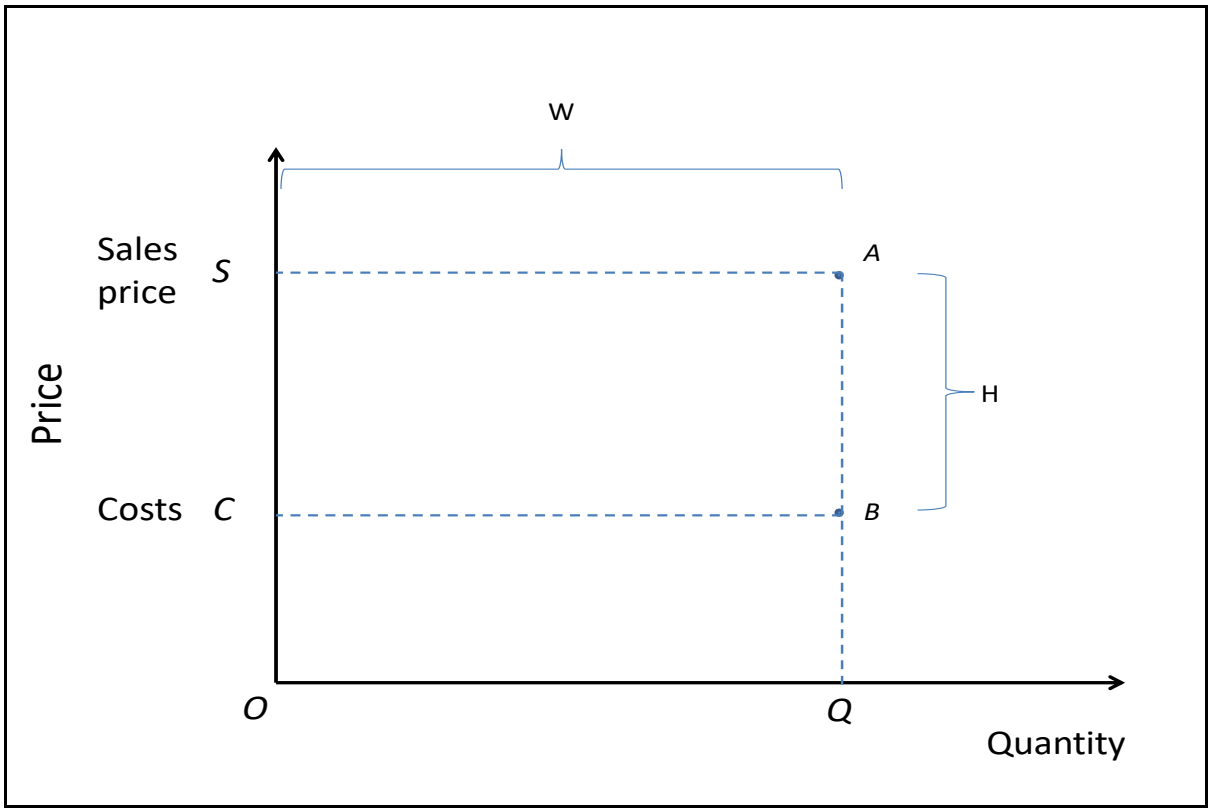


Figure 1: 2D GVA

Local forces in a 2D productivity model

When researchers of productivity apply neoclassical understanding to the analysis of firms, they assume that a firm's labour productivity adjusts in isolation as though the firm constitutes a draw from a random distribution. Unfortunately, this assumption is a fatal over-simplification that detracts the researcher's attention away from gaining a true understanding of a local economy's ecosystem. Figure 1 highlights that productivity figures represent the interplay of a variety of factors that are firm-specific and influenced not only by supply-sided forces but also by demand-sided factors: recall that total revenue is a measure of the level of effective demand. Demand is effective only when consumers make purchases and consumers do not purchase products from a randomly drawn firm (such as a randomly drawn newsagent hundreds of miles from the consumer); nor is the purchase of a product within a territory by random chance, as it illustrates the result of Hirschman's (1970) exit, voice, or loyalty at the local level by consumers. Instead, a consumer purchases a good or service within a firm's territory, which is an area in which the firm supplies their goods and services. Building on Mollard et al.'s (2007) understanding that development is a process of construction by local populations, a firm-specific territory is a function of both where the manager sells their products and where consumers buy them, as both of these determine turnover values.

Territories

Consumers experience their lives within familiar neighbourhoods, which may include travel to leisure activities and to communities of friends, family, and work. Firms also have their

own territories in which they operate, serve their customers, complete with other firms, and protect their market shares from actual and potential competitors. A territory is the area over which firms and consumers interact within the marketplace and conduct their business.

The physical geography of a landmass, together with the embedded transportation network, will affect territories of both consumers and firms, with agile firms (consumers) adapting to their landscape and responding to and shaping consumers' demands (firms' supplies). A spatially bounded territory is idiosyncratic for each firm and each consumer, but it is also pliable and blurred (Dicken and Malmberg, 2001). For example, a newsagent in a densely populated urban territory will have a different spatially bound geographical territory than a newsagent in a sparsely populated rural idyll, and these spatial boundaries will fluctuate in response to shocks and the evolution of trends, cultures, and social norms.

Figure 2 depicts the spatial distribution of newsagents, with their respective locations highlighted using black dots, with their surrounding territories represented using bold black lines, and with their main customers residing in shaded areas. Customers residing in a non-shaded area will be more likely to switch between vendors, but those customers resident in the shaded areas will choose to remain loyal to their proximate newsagent due to convenience and the need to avoid additional time costs. Some areas will have dense populations with effective demand, and therefore their geographical territory will be small (e.g., newsagent *A*), whereas other newsagents will be located in areas with less dense populations and have low levels of effective demand, so their territories will be larger (e.g., newsagent *B*).

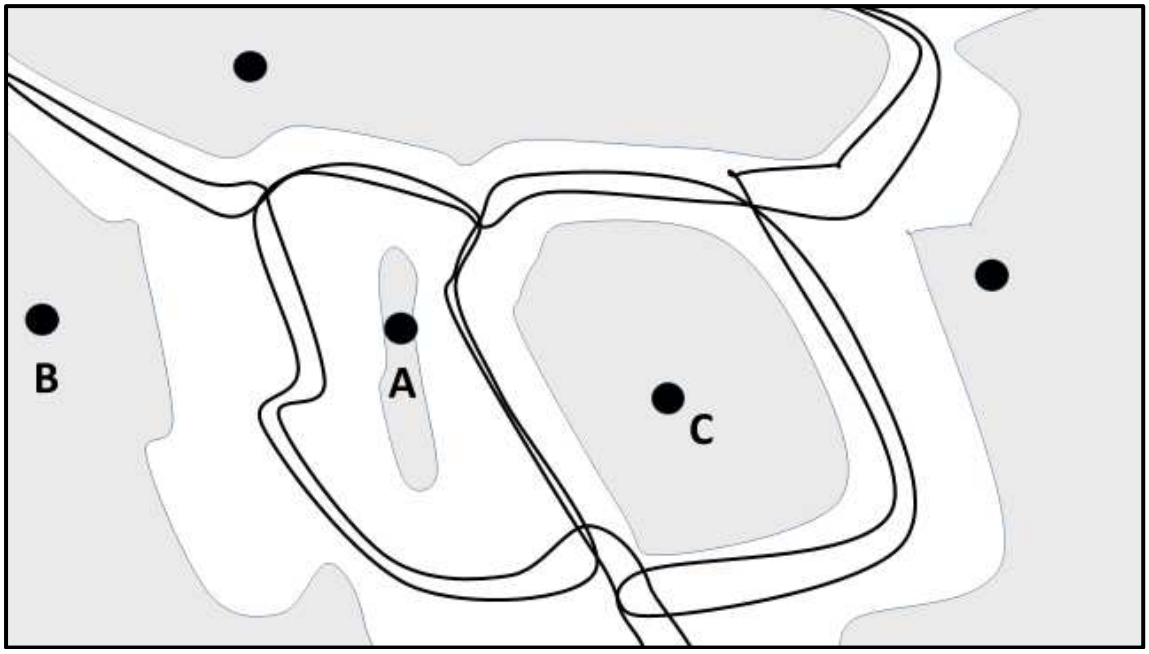


Figure 2: hypothetical territories of newsagents

These newsagents may be included in the territory of a single out-of-town shopping centre, and a pair of out-of-town shopping centres with overlapping territories may both be contained within the single territory of an online marketplace, such as Amazon or Alibaba. Figure 3 depicts the territories of two out-of-town shopping centres, whose respective offices are highlighted using triangles. The reality is that the local embeddedness (Rychen and Zimmermann, 2008) of firms operating in different sectors may be multi-layered and overlap, with some territories characterised as rivalrous and excludable. Decontextualising firms and territories in an aspatial analysis simplifies reality, so that we conveniently ignore the complexities of the territorial marketplace where consumers demand co-determines the value added of firms' outputs. An advantage of recognising the importance of firm- and consumer-

level territories is that they enable us to disentangle the complexities underpinning the spatial-industrial ecosystem. From here we can appreciate the connections between firms, consumers, wage levels, and effective demand, all of which co-determine the GVA productivity rectangle.

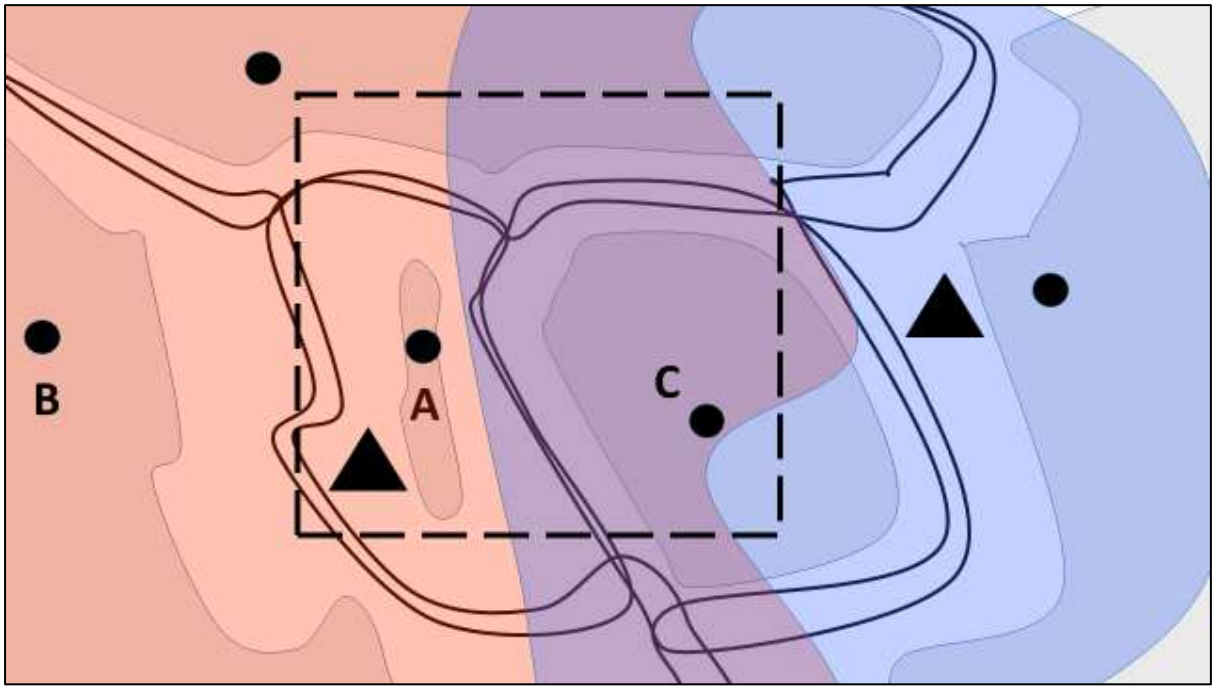


Figure 3: Hypothetical territories of newsagents, car showrooms, and policymakers

Many firms' territories will not be subsumed entirely within a single administrative district. Figure 3 includes a square with a dashed outline used to portray a policymaker's jurisdiction. Note that although most of newsagent *A*'s customers are based within the policymakers' administrative district, there is only one other newsagent based in that area even though the area includes part of the territories of two further newsagents. Moreover, if *Q* and the gap between *S* and *C* are not coincidentally large enough for newsagent *A* to be sustainable in the long run and so closes, newsagent *A*'s customers will switch to newsagent *B* whose territory then expands accordingly. Under this scenario, only newsagent C will inform the GVA value for that policymaker's rectangle (as GVA is measured at the location of the business not the residence of those exercising their demand) even though that newsagent only meets the needs of about a third of the area's customers. Further complications arise when a non-resident online vender presides over an entire local economy. These complications hamper the ability to gage an accurate measurement of the effectiveness of a policymakers' actions on GVA productivity figures.

4. So what determines productivity in rural and urban areas?

Producer issues

Local firms draw on supply-side resources to enhance their productivity rates. Although the resource-based view (Barney, 1991) of economic development has its followers, and the knowledge-based view has credence in that the most important resource for a firm is its intangible knowledge (Spender, 1996), what is much less developed in the local development

literature is the dependency of a firm on the effective demand for its goods. Our territorial 2D productivity model makes clear that demand is a necessary but under-appreciated and under-researched part of the spatial productivity puzzle and establishes that there are three main supply-side considerations.

First, firm-level productivity figures mirror their intra-territorial profile, which reflect the scale of output, market share, and the economic size of that territory, all of which are dependent on the level of effective demand, local and otherwise, that co-determine the value of turnover which is ultimately determined by the number of sales, *Q*. Territories with a larger number of potential consumers provide more scope for growth. For example, rural territories with a smaller number of potential consumers provide less scope for growth compared to urban areas, should that be a managerial objective. Working against the scale component for any firm's GVA are the number of competitors that offer substitutes within the firm's territory: the more competition then the lower will be the mark-up, the lower the market share, and the smaller the GVA rectangle. A territory where there are lots of firms with small GVA rectangles will inevitably have a low average productivity value, holding all else the same.

There will be other areas where latent market demands are unfulfilled, so in this case firms need to employ demand management techniques, such as persuasive advertising to underscore product differentiation (von der Fehr and Stevik, 1998). In some cases, a firm will wish to invest in demand management to protect their market share and offset their competitors' demand management efforts. A firm may endeavour to increase its turnover by encroaching on another firm's territory. This leads to the intuitive conclusion that an industry concentration ratio is only valid for policymakers if the territories of firms overlap. Another ploy to enhance the scale of a firm's output is by encouraging purchases of complementary goods while discouraging purchases of substitute goods, possibly through persuasive marketing campaigns and by influencing intra-territory fashions. Protection of a firm's local market share is possible by strengthening implicit contracts and social ties with consumers and suppliers. Such institutions reflect senses of belonging and connection between managers and consumers. The spread of knowledge of good service and high product quality through word-of-mouth or unsaid but visible indicators of consumption (Veblen, 1899) (e.g., shopping bags displaying a vendor's name, see Lee and Na, 2008) can protect, maintain, or expand effective demand, and hence *Q*, within a firm's territory.

GVA depends on the scale of sales, which is dependent on the amount of effective demand. In turn, effective demand reflects the number of consumers and their disposable incomes, which in both cases will be higher in urban areas. Greater agglomeration of consumers enables firms to achieve higher productivity due to higher values of *Q*. The future may be bright for rural firms if i) rental values are lower in rural areas, and ii) firms do not need to be proximate to their consumers due to the switch to greater amounts of online shopping which enables greater economies of product variety. Note that this has very little to do with the rate that inputs translate into outputs, i.e. productivity as it is commonly understood, as the 2D productivity approach illustrates that it is the scale of sales that counts.

Second, a firm's GVA figure is dependent on the sales price, *S*, of its goods and services. The standard perspective is that there is a moral imperative (Kant, 2007 [1781]) that compels firms to charge prices that the market will bear, where recessions 'cleanse out' low productive firms that have not been focusing on profit or revenue maximisation.[4] Low GVA figures might indicate high market competition in a territory if that competition drives down *S* or limits market share and stifles *Q*. A lack of proximate competitors in rural areas enables

[4] An underlying question here is whether recessionary forces reflect a form of natural selection, which appeals for research that explores whether firms with smaller effective market territories suffer more or less in recessions irrespective of their rate of using up resources.

higher *S* albeit with low *Q*, though potentially stronger implicit contracts due to fewer local consumers that will stifle the ability for firms to increase *S* in rural areas.

Any rural or urban firm may try to manage its territory by dominating the market and discouraging competition. Quietly colluding with competitors so that firms agree not to participate in price competition or encroach on each other's territories result in greater GVA figures. Once we appreciate that GVA figures are price- and quantity-dependent, we recognise that they are i) not a reliable measure of the non-market product value, as demand will be affected by persuasive advertising rather than a genuine need (Kraehmer, 2006), and ii) misleadingly accurate as indicators of productive efficiency or technological change at any geographical level, as they reflect the value paid for the output rather than a ratio of physical outputs to physical inputs. Indeed, conclusions that growth is necessarily led by technological change is an inappropriate default due to the lack of awareness and in-depth assessment of the true reasons for expansions in the GVA rectangle.

Third, a firm's ability to increase its productivity figure will depend on its ability to use its market power to put downward pressure on the prices of its inputs, *C*. Dicken and Malmbery (2001) argue that inter-firm relations bind functional systems together through transactions, collaborations, and spillovers. Inter-firm relations traversing non-overlapping firm territories accrue benefits, such as cooperative bulk-buying discounts, that increase the GVA of rural firms.

Consumer issues

The 2D productivity model emphasises that demand is at the core of any firm's and area's GVA productivity figures. Firms sell goods and services to consumers within their territories, and turnover is a function of demand. Typically, however, habits of thought (Veblen, 1898) make consumers visit the same newsagent, gas station, and coffee shop, etc. even when consumers move spatially between firms' territories during commutes and leisure pursuits.

The amount of effective demand within a firm's territory depends on the type of product and how consumers view the product's attributes. Customers view a product's price as an indicator of quality, while others view a product according to convenience. It is not simply proximity in terms of distance or in time that matters, but also convenience, habit, complementary activities, and locally relevant conspicuous activities that a consumer may wish to be associated with to nurture their own identity. Producer sovereignty may be strong for and nurtured by some firms, especially those in rural areas. Consumers' responses to other firms' persuasive advertising may be diminished by the presence of local social norms, local contextualised status-related consumption (e.g., places to be seen by others), or values-laden consumption (e.g., related to one's identity, such as Intelligentsia Coffee; see Currid-Halkett, 2017), which again can be stronger in rural areas.

Consumers need to retain their jobs to maintain spending levels, and consumers may commute to work out of a policymaker's jurisdiction. The closure of organisations reduces the number of workers, spending power, and their effective demand, thereby reducing the sales shifting *Q* to the left, and hence reducing productivity levels, which is a negative cycle of cumulative causation. The interconnectedness of the market ecosystem means that GVA values reflect local and non-local forms of cooperation between actors including those in cooperation, in competition, and supposedly innocent bystanders, which makes an economy's dynamism, wealth, and prosperity endogenous and intricately determined by a myriad of complex interwoven and crosscutting local interactions that are, at least in part, conducive to local development policymaking.

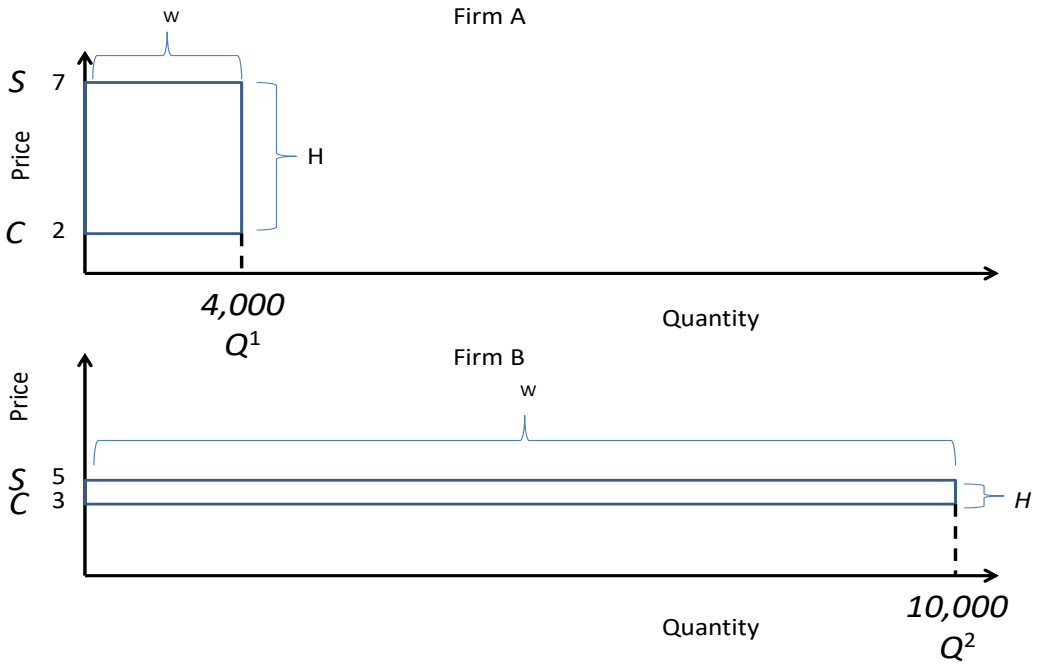
5. The isoGVA curve

The 2D understanding of GVA productivity figures is decisively different from the 1D understanding and it leads to distinctly different and nuanced policy recommendations; generalisations from a 1D perspective cannot be technically correct and meaningful given the complexity and interactions between possible changes in the GVA rectangle. Consider Figure 4, which presents two firms with identical 2D GVA productivity rectangles (and therefore they would have identical 1D GVA figures) but are distributed on an *isoGVA* curve along which *W* and *H* are inversely related. Without understanding the 2D context, it would be understandable, though naïve, to infer from 1D GVA figures (per worker, per hour, or otherwise) that the same policy recommendations would enhance productivity figures of both firms. However, because the responsiveness of demand to price changes differs between the two goods so the effect of the same policy choice on GVA would be different for each firm. Although firms *a* and *b* are both on the same *isoGVA* curve, policymakers should treat these differently by exploring the possibilities of increasing the sales price for firm *B* thereby increasing the mark-up so that *H* increases, whereas they should remove barriers to scaling up production for firm A so that *W* increases for this firm. The 2D representation reveals shortcomings of a blanket policy aimed at improving GVA and provides a nuanced understanding that could explain why previous government strategies have had limited success in rural areas in particular, i.e. the effect of their policies on increasing Q is likely to be limited without encroaching on another firm's territory.

Rural firms are more likely to be in the position of firm A, because of lower population density and therefore lower effective demand that suppresses the ability of *Q* to more to the right. Urban firms are more likely to be similar to firm B, due to higher population densities. To be able to formulate effective GVA productivity enhancing policies, we need to know a range of idiosyncratic information which should start with knowing the firm's GVA value and at least one of *Q*, *S*, and/or *C* before it is possible to start to explore the effect of any denominator (e.g., per worker hour) on productivity figures.

6. Conclusion

This chapter developed a 2D territorial GVA productivity model which underscores that value added productivity figures reflect an ungeneralisable interplay of idiosyncratic firm-specific demand and supply factors. It clarified that the scale, prices, and costs of a firm reflect the demand and supply factors at the territorial level of the firm and underscored that any claim for a robust correspondence between firms' GVA productivity figures and the effects of a policymaker's actions will be spuriously accurate. The aggregation of firms to any spatial level will not reflect purely the efficiency of production in that area and will not necessarily capture technological change, but it will reflect consumption spending patterns. Economic growth may reflect the increase in demand due to more customers or the same number of customers with more spending power. Firm-level productivity is only a relevant concept when it is assessed within that firm's territory because the firm does not reap the benefits of effective demand outside of its territory.



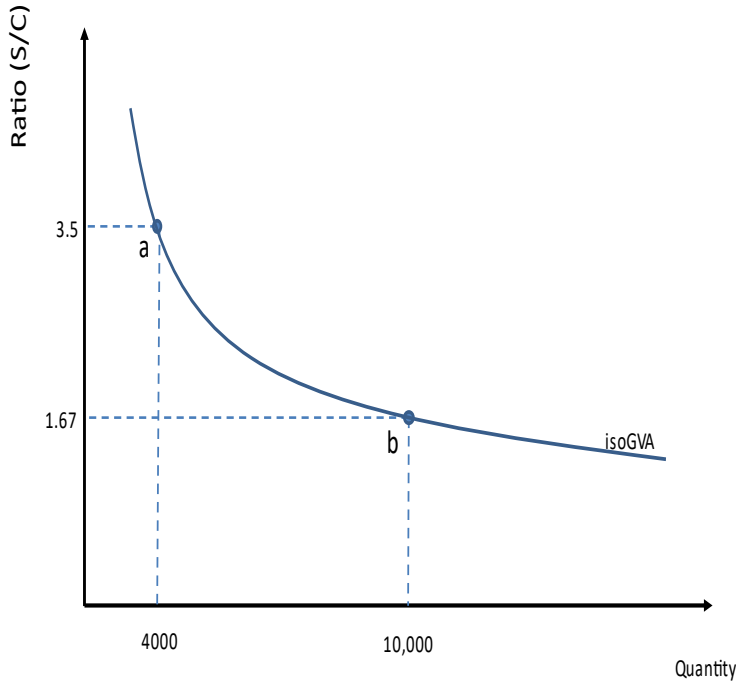


Figure 4: Two very different firms on an isoGVA curve

In the context of rural entrepreneurship, our 2D productivity model illuminates the dynamic forces that shape the economic landscape. Rural businesses, characterised by unique challenges and opportunities distinct from their urban counterparts, can play a pivotal role in determining the spatial imbalances in GVA productivity. The model highlights the intricate links between these imbalances and the scale of consumption and mark-up asymmetries, which are significantly influenced by local institutional forces. Although rural businesses often struggle with limited resources and infrastructure, they can carve out a niche for sustainable practices and locally tailored innovations (Tiwasing et al., 2023), which underscores the potential for rural enterprises to contribute significantly to the UK economy. Levelling up of a domestic economy would be achieved by the closure of firms in rural areas where there are lower levels of effective demand and the opening of firms in urban areas where there is higher effective demand. However, given the longstanding issue of low productivity in rural areas, such policies should not solely focus on the closure of demand and supply between firms in rural and urban areas. Policymakers should acknowledge and leverage the unique contributions of rural enterprises. Rural businesses often supply products that add to the quality of life within their territory and pay workers enough wages that enable them to spend and consume to enhance the economy. Maintaining the presence of low productivity firms in rural areas does not imply that rural businesses are inferior to urban businesses. Sustaining low productivity can sometimes ensure that rural and/or local residents do not have to travel long distances to purchase substitute goods, which could be beneficial both to the economy and to the environment.

If policymakers continue to be charged with enhancing their territory's GVA productivity figures due to the connotations it has with employment and wealth, then they need to be cognisant of the social and local underpinnings that dominate a firm's productive scale and mark-up. Our 2D territorial productivity model accentuates that firm-level value added productivity figures reflect an ungeneralisable interplay of idiosyncratic firm-specific demand and supply factors, which if aggregated would form a spuriously accurate indication of an area's productive efficiency, as is currently the case using 1D figures.

Future research could identify how consumers' territories shape firms' territories, and *vice versa* through demand management policies. Focusing specifically on the lens of rural entrepreneurship, it would be interesting for future research to explore policies that enhance the prosperity and development of enterprises and/or entrepreneurs in rural territories compared to urban ones. Although this chapter has a specific focus on GVA productivity, firms and their territories, future research could explicitly integrate this with the differences between places that occur due to other institutional and political factors that evolve at different spatial scales.

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