DRIVERS OF LOCAL GROWTH: IDEOLOGIES, AMBIGUITIES AND POLICIES

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ABSTRACT: The aim of this paper is to get behind the rhetoric of 'cluster' ideology to look empirically at the processes shaping local economic growth. The 'drivers' of local economic growth in Australia are explored empirically using theoretically informed empirical modelling. Reviewing the debate and ambiguity that surrounds their workings and operation begins the process of unpacking these 'drivers'. Finally, the paper suggests what empirically informed local economic growth policies might look like. The paper seeks to begin a debate on the processes that shape local economies that moved beyond current, narrow ideologies.

1. INTRODUCTION

Governments almost everywhere, and especially in the developed world, are seeking to promote the Knowledge Economy as a way of building international competitive advantage to foster economic dynamism and growth, and to generate jobs (e.g. European Commission, 2002a, 2002b; DTI, 2001). The vision is strongly aspirational. It is of:

> *"… strong non-inflationary growth arising out of the increasing influence of information and communications technology and the associated restructuring of economic activity … [embracing features such as] … the growth of small high-tech firms, the increasing importance of mobile and highly skilled talent, the rise of entrepreneurship and the centrality of venture capital." (Thrift, 2001, p. 414).*

As Armstrong (2001) has remarked, policy makers and interested academics have come to view the task of creating future economic growth through the lens of enterprise ideology focussed on high-tech firms and science based industries (p. 524). At the heart of these processes is a revivified regional development policy that draws on the same vision. And, that vision finds its expression as 'clusters'. It is 'clusters' and 'clustering' that we want to use as the springboard for this paper. Clusters are assemblages of locally networked, innovative businesses that through trust and reciprocity and the exchange and transfer of knowledge remain dynamic and internationally competitive and, most importantly, create jobs. This 'cluster' model, developed and (over) promoted by Porter (1990, 1998), is a model that has become a message that has now become a mantra. Sceptics suggest that it is a concept that moved from obscurity to

meaninglessness with no intermediate stages. This is harsh and undoubtedly there are elements of truth in the model. But, it has been massively overdrawn. Now, for example, it is the foundation of the regional development policies of all the UK's Regional Development Authorities (RDA) (Porter and Ketels, 2003).

Of particular concern, however, are the consequences of this local policy hegemony. There are at least five. First, we no longer look at what other processes might shape local economic growth, notwithstanding the long history of research in the field and the broad spectrum of theories and models that exist. Increasingly, the theory behind the 'cluster' model is hardly debated and has been expanded and elaborated with layers of contingency about 'learning regions', 'learning firms', 'regional innovation systems', 'innovative milieu', 'institutional thickness' and so on. Second, clustering ideas start from the premise that local economies, or rather the economic actors within them, are the authors of their own fates. If they do not grow, *they* got it wrong. Third, unequal power relationships between businesses have suddenly become benign. Issues of inter-firm subordination, exploitation and control have dropped out of the lexicon despite decades of research before the 1990s (see, Taylor, 2000b). Fourth, high-tech industry, now along with e-commerce and e-business, is seen as the only way forward because it is both ICT-based and knowledge-based. Fifth, it is assumed, implicitly that one policy prescription will fit all local economies and the combinations of issues they experience and attempt to cope with.

Our aim in this paper is, therefore, to try to get behind the rhetoric of the 'cluster' ideology and to look empirically at the processes shaping local economic growth. There are three parts to our paper. First, we explore the 'drivers' of local economic growth in Australia. Our approach is one of theoretically informed empirical modelling, (Plummer, 2003). We will not go into the detail of the empirical modelling underpinning our methodology because it is the results that are of interest here and because the analyses suggest a quite specific spectrum of 'drivers' that are shaping Australia's regional economies. Second, we begin the process of unpacking these 'drivers' and to look at the debate and ambiguity that surrounds their workings and operation. Finally, based on this discussion, we conjecture about what empirically informed local economic growth policies might look like. Based upon the current state of theorizing and the practical limits imposed by the availability of relevant data, we do not pretend to have answers to the issues raised. However, we do insist on the centrality of the questions addressed by our empirical modelling of local economic growth in the Australian context. Rather, in this paper, our concern is to begin a discussion and debate on the processes that shape local economies that moves beyond current, narrow ideologies.

2. THEORY AND EMPIRICS: RECOGNIZING THE DRIVERS OF LOCAL ECONOMIC GROWTH

From the literature on institutionalist perspectives on local economic growth, a suite of theoretical frameworks can be identified that purport to explain why some localities succeed while others fail. These theories include:

- Perroux's (1955) growth pole and growth centre model;
- Vernon's (1966) product-cycle model elaborated to include profit cycles and regional cycles;
- The flexible production and flexible specialization model popularized by Scott and Storper (1992);
- The learning regions model (Lundvall, 1992), including the concepts of networks and embeddedness;
- Porter's (1990, 1998, 2000) competitive advantage model extended to include 'clustering'; and
- The enterprise segmentation model that focuses on unequal enterprise power relations (Taylor and Thrift, 1983).

Drawing on previous research it can be suggested that each of these theories constitute vaguely formulated and ambiguous sets of propositions, placing limits on the potential set of drivers of local economic growth rather than proving directly empirically estimable models. While we recognize the difficulties of translating between qualitative theories and their quantitative implications, we have distilled the institutional perspective into a suite of theoretical statements that involve different permutations and combinations of eight latent theoretical constructs that are thought likely to enhance local economic capacities to create growth and cope with change (Plummer & Taylor, 2001a). These are:

- technological leadership at the enterprise level;
- knowledge creation and access to information;
- local or locational integration of small firms;
- infrastructure support and institutional thickness;
- the local human resource base;
- the power of large corporations affecting structure and strategy;
- interregional trade and the extent and nature of local demand; and
- local sectoral specialization.

Each model identifies a unique subset of these latent theoretical constructs as generating local economic success, and while they may promote growth in some models, in others they retard it. Table 1 summarises this synthesis of the literature on institutionalist theories of local economic growth. Further, Table 2 summarises the way in which we have chosen to operationalise these latent constructs into empirically measurable variables. The argument supporting this summary and operationalisation has been elaborated elsewhere, as have the problems and pitfalls of translating between these theories, the latent constructs representing local economic capacities, and the surrogate variables that can be used to measure the concrete circumstances of Australia's regions (Plummer and Taylor 2001a).

Table 1. The Dimensions of Theories of Local Economic Development

EXPLANATORY VARIABLES	THEORETICAL MODELS					
	Com	Lrn	Flx	Pro	Grw	Seg
HITECH	*	*	*	*	*	*
INFOACC	*	*		*	*	
MLOCN	*	*	*			*
PROT	*	*	*			
DEGREE	*	*	*	*		
TOTPOP				*	*	*
MKTACC	*			*		
SPEC	*	*				

Key: Com = Competitive Advantage Model,
Lrn =Learning Regions Model,
Flx = Flexible Specialization Model,
Pro = Product Cycle Model,
Grw = Growth Pole Model,
Seg =Segmentation Model.

Our earlier econometric modelling used a theoretically informed general-to-specific model selection strategy to confront the suite of institutional theories with the empirical evidence of contemporary local economic growth in Australia (Plummer & Taylor, 2001b). This modelling strategy is the practical extension of cross sectional data of an LSE inspired empirical modelling methodology developed by David Hendry and his colleagues (Hendry & Mizon, 1990). A general-to-specific model selection strategy begins with an over-parameterised model that, in this case, contains the set of potential drivers of local economic growth identified for Institutional theories and operationalised using the measurement model outlined in Table 1 and Table 2.

Table 2. Dimensions of Theories of Local Economic Development and Explanatory Variables

Dimensions of Theories	**Theoretical Models**						**Variable Name**	**Description of variable *(see Appendix 1)***
	Com	Lm	Flx	Pro	Grw	Seg		
Technological Leadership at the Enterprise Level	*	*	*	*	*	*	HITECH	Index of High Technology Industries (late 1980's)
Knowledge Creation and Access to Information	*	*		*	*		INFOACC	Index of Access to Information (late 1980s)
Local Integration of Small Firms	*	*	*			*	MLOCN	% Estabs in Multilocational Enterprises (1992)
Infrastructure Support and Institutional Thickness	*	*	*				PROT	Effective Protection Rate(1990)
Local Human Resource Base	*	*	*	*			DEGREE	% Working Population Without a Degree (1991)
Power of Large Corporations				*	*	*	TOTPOP	Index of Corporate Control (1992)
Inter-Regional Trade and Local Demand	*			*			MKTACC	Index of Intermediate Market Accessibility (late 1980s)
Local Sectoral Specialization	*	*					SPEC	Index of Specialization (1990)

Source: Plummer and Taylor (2001a).

In our previous work, a 'gap convergence' model has been specified to capture the complex, interdependent and contingent relations driving processes of local economic growth across Australia, measured in relation to local labour market dynamics for the period 1984 to 1992.

$$\ln(R_{it}) = \beta_0 + \beta_1 \ln(R_{it-T}) + \beta_2 HITECH + \beta_3 INFOACC + \beta_4 MOLCN + \beta_5 PROT + \beta_6 DEGREE + \beta_7 TOTPOP + \beta_8 MKTACC + \beta_9 SPEC + \varepsilon_{i,t,t-T}$$

where, εit,t-1 is assumed to be normally distributed with an expected value of zero, errors independent of the set of explanatory variables, uniform variance, uncorrelated, and with fixed regressors in repeated samples. This over-parameterized model is tested for congruence with the data. In the context of this modelling exercise, an econometric model is congruent with the data if and only if it has (i) homoscedastic errors; (ii) weakly exogenous conditioning variables for the parameters of interest; (iii) constant, invariant parameters of interest; (iv) theory consistent, identifiable structures; (iv) data admissible formulations on accurate observations (Bontemps & Mizon, 2001).

In the over parameterised general model specification, base year unemployment relativities and the regionally specific structural variables account for approximately 54 percent of the variability of regional unemployment relativities in 1992. A computed $F(9,84) = 10.93$ [0.000]** provides strong evidence in favour of the hypothesis that the general model specification accounts for a statistically significant amount of the variability in regional unemployment relativities in 1992 and the misspecification tests support the belief that it is reasonable to use this model to make inferences about the processes driving local economic growth in the Australian context and to test the competing theories of local economic growth.

Once congruence between the over-parameterized general model and the data has been achieved, then this specification is tested down to a specific congruent empirical model that represents a more parsimonious representation of the data. In this case, testing down involves imposing linear restrictions on the general model in accordance with theoretical expectations. To establish whether this general model captures any specific information that is not embodied in the institutionalist theories, we used a variance encompassing procedure to test the validity of the restrictions that are imposed on this over-parameterised model. The encompassing model is defined as the model that variance dominates the set of alternative model specifications in the sense that the other model contains no information capable of improving the model (McAleer, 1994). Assuming that the linear restriction imposed on this general model are correct:

Competitive Advantage:	Ho:	$\beta_7=0$
Learning Regions:	Ho:	$\beta_7=\beta_8=0$
Flexibility:	Ho:	$\beta_3=\beta_7=\beta_8=\beta_9=0$

Product Cycle:	Ho:	$\beta_4=\beta_5=\beta_9=0$
Growth Pole:	Ho:	$\beta_4=\beta_5=\beta_6=\beta_8=\beta_9=0$
Segmentation:	Ho:	$\beta_3=\beta_5=\beta_6=\beta_8=\beta_9=0$

Based upon the methodological norms of congruence and encompassing, the Flexible Specialisation model is the preferred empirical specification. Table 3 and Figure 1 summarise the Flexible Specialisation theory and the associated misspecification tests and diagnostics.

Table 3. Flexible Specialisation Model Specification

	Coefficient	Std.Error	t-value	t-prob	Part.R^2
Constant	0.5613	0.2298	-2.44	0.017*	0.0635
LnRU84	0.4231	0.06864	6.16	0.000**	0.3016
HITECH	-0.0433	0.03479	-1.25	0.216	0.0173
MLOCN	0.0055	0.00524	1.06	0.293	0.0125
PROT	0.0203	0.00538	3.78	0.000*	0.1397
NODEG	0.0095	0.00350	2.72	0.008**	0.0775

R^2	0.51710	F(5,88) = 18.85	[0.000]**
Normality test:		Chi^2(2) = 2.4356	[0.2959]
X^2 *test*		F(10,77) = 0.2888	[0.9819]
$X_i * X_j$ *test:*		F(20,67) = 0.3293	[0.9963]
RESET test:		F(1,87) = 0.0925	[0.7617]
LMERROR test:		Chi^2(1) = 2.4461	[0.1178]

Test for general restrictions (convergence): Chi^2(1) = 70.6159 [0.0000] **

Nevertheless, the evidence from this Australian case study places significant caveats on the drivers of local economic growth that are identified by the Flexible Specialization theory. Specifically, the prioritisation of drivers that can be identified from the econometric model suggests that significant dimensions of the theory find little support in the Australian context. Specifically, the empirical modelling indicates that:

- the ***human resource base*** enhances local growth, and this matches with the expectations of theory.
- ***institutional thickness*** does not work in the way predicted by theory, at least in the Australian context. In the analysis undertaken for this study institutional thickness restricts rather than enhances local growth. This finding matches with the criticisms of this concept and its innate ambiguity, which is now receiving increased attention.
- ***technological leadership*** enhances local growth, but only in a minor way. This is somewhat at odds with the expectations of institutional

based theory, which promotes technology and technological change as a key driver of local economic growth.

- the ***local integration*** of enterprises is a lesser force impacting on local growth. This suggestion is strongly at odds with current Institutionalist thinking on clusters and the processes of clustering. It does, however, fit with research on the workings of the West Midlands metal complex during the interwar years (Beesley, 1957) and more recent research on Silicon Valley (*The Economist*, 2003). This research suggests that the local embeddedness of businesses and their local networking and integration may be conducive to the creation of new enterprises but not necessarily to their continued growth.

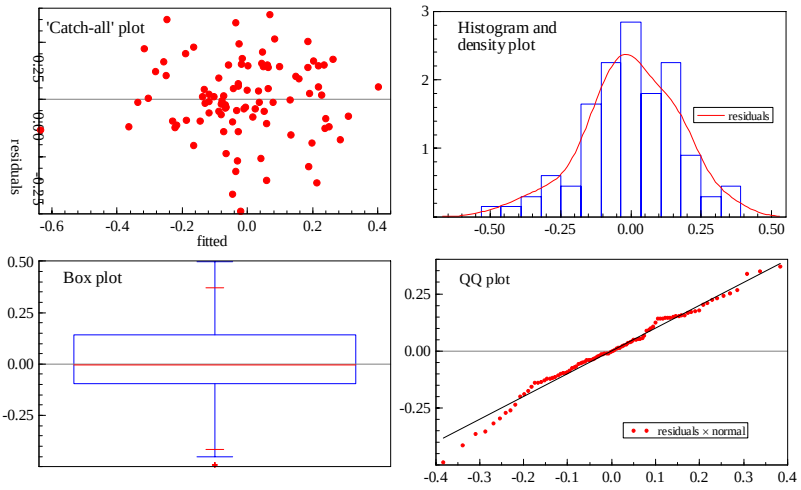

Figure 1. Diagnostic Plots for the Flexible specialisation Model

As a corollary, the empirical modelling suggests that no single dimension can be identified as the key with which to unlock the mysteries of local economic growth. Each of the dimensions identified by the Flexible Specialisation model is necessary to enhance the capacity of a local economy to generate growth. However, no one dimension is individually sufficient to generate local economic growth. This has important policy implications, because it suggests that there is no one best way that will guarantee the success of a locality within the global economy. In addition, it also indicates that the processes driving local economic growth are somewhat less complex than some imagine, at least in terms of deriving an empirical model using the methodological norms of congruence and encompassing.

The local economic drivers that the empirical modelling exercise reveals can also be re-combined to suggest that two sets of processes are the basis of local economic growth, at least in Australia and possibly more broadly:

- the magnitude of ***local human resources***,
- the local presence of an ***'enterprise culture'***, built principally on technological leaderships but with an element of local enterprise integration.

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Although it has been assumed that the sets of processes revealed by the analysis operate independently of each other, they can also be interpreted somewhat differently as processes at two discrete stages in the value chain that creates new knowledge in a locale.

3. HUMAN RESOURCES, AN 'ENTERPRISE CULTURE' AND 'ENTERPRISING'

So, the question that arises from our interpretation of the empirical evidence is: what do these terms 'local human resources' and 'enterprise culture' mean? A simplistic interpretation of the two sets of processes identified as a result of this modelling exercise would be to suggest that, to formulate policy interventions to enhance local growth in any particular city or region, all that is needed are training programmes and 'workfare' schemes, coupled with small firm development policies. This is an approach that sees every community trying to attract hi-tech industry, while youth, lone parents and the unemployed are steered into IT training to equip them for the 'Knowledge Age' (Martin, 2000; Leonard, 2001). Fundamentally, this is a 'top-down' approach to policy formulation and implementation. It is about policy makers and planners 'picking winners' – just as sectors are targeted by Regional Development agencies in the UK to build 'clusters', for example. By inference, this is the public sector showing the private sector how to act strategically.

Experience in the regional development policy field, as practitioners and critics (Taylor, 1994; Taylor and Garlick, 1989) suggests that this might give politicians the satisfaction of having 'done something', but that satisfaction lasts only as long as the subsidies they hand out (Del Monte & Scalera, 2001; Taylor & Garlick, 1989). We conjecture that 'local human resources' and 'enterprise culture' need to be interpreted much more cautiously and carefully. The Multidimensional latent constructs identified by the Flexible Specialisation model need to be conceptually 'unpacked' as a first step in moving beyond the simple surrogates used in the empirical modelling exercise and the simplistic policy prescriptions that they are only too readily translated into. We will deal with them in turn.

3.1 Local human resources

What constitutes 'local human resources' is complex and problematic. They can be said to have at least two components:

- a ***local social capital*** component recognising networked relationships of trust among the businesses and workforce of a place; and
- a ***local human capital*** component that identifies the skill base of a locality's workforce and population.

Unfortunately, neither of these concepts is straightforward and unambiguous.

Social capital has been defined by Putnam (2000) as the, *"connections among individuals - social networks and the norms of reciprocity and trustworthiness that arise from them."* (p.19). According to the World Bank (2002), *"social capital refers to the institutions, relations and norms that shape the quantity and quality of a society's social interactions"*. For Bowles and Gintis (2002), *"social capital generally refers to trust, concerns for one's associates, a willingness to live by the norms of one's community and to punish those who do not"* (p.1). These quotes serve to illustrate Durlauf's (2002) contention that this is a confused and chaotic concept because it mixes both causal and functional elements. The functional element is evident in the set of norms and values social capital is said to provide which facilitate co-operation and efficiency. The causal element emerges because the co-operative behaviour of others makes the co-operative behaviour of individuals a rational choice. And here a further element of confusion appears because it is unclear whether that choice is made because of (a) altruism and fairness in a community, or because of (b) fear of retaliation. Just to add more shades of complexity and confusion, there is no reason why social capital should only be positive and not negative (or perverse') – as with the activities of the Mafia or the restrictive social structures of some societies and immigrant groups. It is hardly surprising that social capital is difficult to measure. It is hard to know what it means!

Human capital, too, is an ambiguous concept that is difficult to operationalise. While human capital theory suggests skills formation and investment in skills through education is a mechanism to augment worker productivity and create growth (Wolff, 2000), empirical studies give quite equivocal results depending on how educational levels are measured. There is certainly some support from the US studies that:

> *"… [a] more educated workforce may make it easier for firms to adopt and implement new technologies. Firms may value workers with education because they are more able to evaluate and adopt innovations and to learn new functions than less educated ones" (Wolff, 2000, p. 436).*

And, apparently, while rising rates of primary education improve local rates of labour productivity, rising rates of secondary education do not. Empirically, increasing rates of university enrolment also seem to have an insignificant impact on productivity growth rates, but this may be a function of the sectors, especially the service sectors, where graduates seek employment. And, it is quite unclear whether education, especially higher education, is a cause or a consequence of growth and wealth creation.

So, in the face of conceptual ambiguity, the issue is where do you stand? We would argue that the creation, refinement and enhancement of *'human resources'* is about *education and not training*. Education is about equipping people to work within a global sphere of economic activity that is subject to rapid change (Le Heron & McDermott, 2001; Cohen Wesley & Goe, 1994; Palet & Paritt, 1994; Patchell & Eastham, 2001; Keane & Allison, 2001). It is about providing individuals with an understanding of facets of the economy and society they live in, and the processes of change that run through them (Cooke, 1996; Hudson, 1994; Nijkamp & Mouwen, 1987; Saxenian, 1994). Training equips people for

what is known now. It is about training people to meet the labour needs of existing local employers as a mechanism to promote local growth (Leonard, 2001). It is about conforming to and supporting winners that other people have picked. Obviously, not everyone is an innovator. But, in the so-called 'knowledge economy' where, following in Arrow's (1962) footsteps, new knowledge is seen as being created through 'learning-by-doing' and 'learning-by-interacting', the expectation is that firms' workforces as well as their owners and managers have a role to play in innovation processes (Asheim, 1996, 2000; Maskell & Malmberg, 1999; Lundvall & Maskell, 2000). To fulfil this role they need to be educated and not just trained. In this way, individuals in a community, city and region are empowered to add to the local stock of tacit knowledge that might lead to the improvement of a product or service offered by an existing firm. Equally, it might encourage someone to set up an altogether new business (see Vatne, 2001). It is self-evident that not every small centre in every peripheral or developing region is going to become a hub in the IT industry. But, it is just possible that a local person might come up with a new twist on a local resource. This is what a group of fishermen in Esperance in Western Australia did when they started a business selling sushi to Japan. It is what graziers in Victoria did when they started a business selling pelletised lucerne as animal feed to Japan (Moon and Willoughby, 1990; DILGEA, 1987).

3.2 Enterprise culture and 'enterprising'

The identification of 'enterprise culture' as a driver of local economic growth in Australia tends to reinforce most governments' views of what generates growth, especially job growth, at both the national and regional levels. The conventional interpretation of this local enterprise culture is that it revolves around processes of new firm formation, which then creates jobs. Where this does not occur, nationally or regionally, there is assumed to be an 'enterprise deficit' – insufficient numbers of risk-takers driven by the desire to create personal wealth and jobs. This is the reasoning that lies behind most developed country policies to promote small business. As the story would have it, strip away the impediments to new firm and small firm development (and all the better if high-tech is involved), and natural processes of entrepreneurship in society can burst through. The accusing finger has been pointed at excessive taxation, 'red tape' and risk-averse banks. In the UK at least, that finger has also been pointed at 'welfarism', the 'collectivism' of the unions and the professions, and an 'aristocratic disdain for commerce' created by elitist education. Those enabling policies and programmes have now been extended to include entrepreneurship education and 'outreach'. Universities are now to engage with their academics and students to spin out businesses as never before. And, by reaching out to the business communities, these institutions can transfer knowledge to the community, boosting entrepreneurship still farther.

Superficially, this way of promoting entrepreneurship is very appealing. But as Armstrong (2001) has argued it is essentially an ideological point of view that does not match well with the empirical reality that survey research has revealed. Here we would like to make four points.

First, *not all entrepreneurs are risk-takers*. In a classic study, Brockhaus (1980) for example, showed that the risk-taking propensity of entrepreneurs who had shifted to set up their own businesses was not significantly different to that of managers who had shifted within or between businesses. Certainly there have been studies that have pointed to the entrepreneurs being risk-takers, but as Armstrong (2001) has concluded:

> *"A significant proportion of small business owners are not risk takers at all, whether they are called entrepreneurs or not" (p. 543).*

Second, *hi-tech science-based start-ups are often risk averse*. Research on business start-ups in Silicon Fen suggests a caricature of the start-up sequence being:

- State-funded research and scientific consultancy;
- Standardisation of an analytic or design service;
- Part employment of the scientist in a new start-up, but retaining an academic salary;
- Full commercialisation of the new ideas and shift out to an independent business;
- Deal with niche suppliers and customers – frequently in the pubic sector.

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This has been dubbed 'soft' start-up and it matches neither the anticipated form of entrepreneurship nor the expected role of the universities.

Third, *not all small firms are growth orientated*. And they create few jobs. Many set up as an outlet for professional or technical or craft skills rather than for purely economic motives. Many are unwilling to risk the 'reputational capital' they used to build their businesses by putting at the mercy of paid employees.

Fourth, *people are not necessarily 'entrepreneurial' throughout the whole of their working careers.* Frequently, they may only be involved in one start-up. Certainly, there is a significant group of entrepreneurs who are multiple (portfolio) and serial entrepreneurs, but this is not everyone.

We believe that 'enterprise culture' should be conceptualised differently. An alternative interpretation is that a local 'enterprise culture' is about people being 'enterprising'. The distinction I would draw between '*setting up a new enterprise*' and being '*enterprising*' is non-trivial. First, I would argue from my own research that firms are better conceptualised as being temporary coalitions of individuals who come together to exploit a business opportunity for personal wealth creation (Taylor, 1999; 2001). This is 'enterprising'. The coalitions stay together for as long as the opportunities exist. Coalitions break up and re-form. Coalition members may be involved in more than one coalition. Indeed, there is evidence to suggest that, in the small firms sector, the most successful people are 'multiple-entrepreneurs' or 'portfolio-entrepreneurs' (Hall, 1995; Rosa & Scott, 1999a, 1999b). Second, coalitions are not the basis of just small firms. They are also at the core of large enterprises and corporations – as corporate boards and strategic management teams. The coalitions running and managing large corporations constantly dissolve and re-form as board members are recruited, fired, co-opted and imposed by external interests. 'Enterprising' is not the sole

preserve of entrepreneurs. It has important corporate dimensions too (Taylor 2000a). The processes that create the large firm and small firm coalitions of individuals are at the very heart of a local enterprise culture.

Coalitions perform one very important but all too frequently overlooked function – they *translate ideas* into capitalist activities. They not only recognise opportunities, they *realise* them. They identify products and services and take them to the market. Between a bright idea and running a business is this important intermediate step of translation. A technology has to be able to achieve commercial levels of production, supplies have to be secured, markets have to be opened, finance has to be secured. It is really quite unsurprising that coalitions of specialists come together to be enterprising. They bring together 'the knowledge of the practical circumstances of time and place'. This is an important point, especially in relation to the role of universities in promoting local and regional growth. Universities create scientific knowledge but they do not translate it in the sense used here. Indeed the question arises as to whether entrepreneurship education in universities can impart that knowledge of practical circumstances.

By this interpretation, high rates of new firm formation are not indicative of an 'enterprise culture', although they might be the *outcome* of such a culture. Rather, an 'enterprise culture' is what brings people together in the first place to create, re-create, mould and extend the coalitions that seek to translate ideas into commercial realities. As a result, we would suggest, policies and programmes to create an enterprise culture in a city, region or community need to create the circumstances that will encourage and facilitate coalition formation. When those policies are aimed only at helping new firms to set up, they are in effect subsidising coalitions *after* the event. Indeed, the policies and programmes themselves might be the very opportunities that such coalitions are set up to exploit – the opportunity to leverage funds from the public purse!

It can be suggested that the key to fostering an 'enterprise culture' is *facilitation* – creating the circumstances that allow 'coalitions' to form to exploit the opportunities that *they* identify. It is not picking winners and subsidising them. It is about creating forums where potential coalition members might meet and generate ideas – people from the small firms sector, the corporate sector the public sector, and the local community. It is about easing the passage of new coalitions through the red tape of regulation, and standing with them as they present the business plans they have devised and financed to commercial sources of finance and potential buyers and suppliers. It is not about public sector policy makers imposing their preconceived ideas of economic success on local communities.

4. TOWARDS A LOCAL DEVELOPMENT POLICY INITIATIVE

Against the background of our empirical modelling of local economic drivers and their interpretation in the Australian context, a local public policy initiative for economic development might, therefore, have two main components:

- an entrepreneurship education component, and
- an enterprise facilitation component.

Based upon our previous facilitation argument, the entrepreneurship education component would need to be broad and multifaceted. It would need to:

- allow people to identify all forms of commercial and business opportunities, beyond the sciences and engineering, and to help them float their own business ideas;
- promote and facilitate the conversion of new technologies and knowledge into commercial ventures;
- equip latent or actual entrepreneurs with the skills to run a business – beyond accounting, business planning, marketing, human resource and financial management skills and so on;
- to link education more strongly with the local business community and the community more generally to help people realise all types of latent commercial ventures.
- to educate those who move into the corporate and public sectors about the material impact they can have in those positions on the efficacy and success of local entrepreneurial activity; and
- raise awareness of the processes of 'globalisation', the 'knowledge economy', and 'enterprise culture' as these might impact on business performance.

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But, these elements of entrepreneurship education should be in addition to the broadly based scientific, technological, and liberal arts education of higher education institutions that encourages people to think more broadly beyond what is already known. It is that broad thinking 'outside the boxes' that is a vital component of inventiveness and innovation to meet the changing needs and wants of society.

Such broadly based entrepreneurship education would link von Hayek's 'practical knowledge' – 'the knowledge of the practical circumstances of time and place' – and the 'scientific knowledge' of the academy. In this way, entrepreneurship education would "… pay more attention to the concrete ways in which entrepreneurs locate and exploit opportunities" (Swedberg, 2000, p. 10).

A greater training effort is, it can be suggested, an important complement to entrepreneurship education and to the creation of an 'enterprise culture' more generally. In one sense, however, training has the potential capacity to enhance a community's skill base. But, in another, it brings with it the dangerous potential to ossify that community's skill base (particularly when it is focussed on ITC alone), create social blinkers, even economic tunnel vision, and to hinder economic change and development. Indeed, Leonard (2001, 2002) has spelled out in detail this down side of skills training as it emerged in training initiatives in the UK, particularly in London.

The facilitation component of such a local economic development initiative would be focussed on policy supporting the process of 'enterprising', but not on 'picking winners' (see also Taylor, 1994; Taylor and Garlick, 1989). The potential for public policy to support private wealth creation can be particularly fruitful. In particular, the public sector can act as a facilitator by:

- setting up ***local community forums*** **–** to give individuals, and the institutions they belong to, a voice to identify what communities think are local strengths, weaknesses, opportunities, and threats;
- putting ***'facilitators'*** into local communities to help identify and assist in promoting locally generated commercial ideas;
- offering ***local services*** to support people in preparing business plans and to commercialise their ideas;
- pressing all local public sector services, especially planners, producer services (like banks/accountants etc.) to establish ***fast-track review structure***s to expedite business development and expansion;
- fostering ***local venture capital*** provision;
- establishing ***business forums*** and/or regular seminars to foster links and social ties in the business community, i.e. to facilitate knowledge transfers; and
- enhancing links between ***universities*** and the business community to enhance knowledge transfers and innovation (Patchell & Eastham, 2001).

This list is indicative rather than prescriptive. My intention is only to open up a dialogue about what might be appropriate policies for local growth in the circumstances of globalization. The reassessment and prioritization of local growth processes we argue for here also calls for new approaches to policy.

5. CONCLUSIONS: PROPOSING AN APPROACH

In this paper, we have explored the policy implications of using theoretically informed empiricism to validate Institutionalist theories of local economic growth. Using the methodological norms of congruence and encompassing, our empirical findings suggest that the drivers of local economic growth are, perhaps, less complex and contingent than some researchers imagine. Within the limitations of our data, we are able to identify a relatively small set of "key" measurable variables that underpin the local growth process, at least in the Australian context. Furthermore, we are able to construct a plausible interpretation of those measurable variables in term of two underlying theoretical constructs: *local human resources*, and *local enterprise culture*. The interpretation offered in the paper is that 'human resources' refers to education and not just training, and that a 'local enterprise culture' is about people being enterprising and governments facilitating enterprise processes but not 'picking winners'. From this refinement of the apparent drivers of local economic development, it has been possible to identify potentially realistic and appropriate forms and areas of public sector intervention that are compatible with the results of empirical modelling.

We accept that the propositions explored in this paper are contentious. However, we do not pretend to provide definitive answers to local development issues in Australia and policies that might be introduced to achieve local economic growth and equity. Indeed, such a claim would be antithetical to our approach to understanding the processes driving local economies. Rather, our

aim is more modest, to initiate a dialogue within economic geography, and beyond, on how we might pull national policy levers and make a difference in the societies we live in that is proactive rather than reactive. We contend that theory informed empirical modelling can be a fruitful approach to operationalising and validating propositions on local growth, and translating those propositions into realistic local policy interventions. At the same time, the apparent drivers of local growth identified in this way need very carefully to be 'unpacked', both theoretically and empirically. The stylised facts that lie behind those drivers are not without controversy.

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