HIGH GROWTH ENTERPRISES AND GAZELLES

Paper prepared for
The International Consortium on Entrepreneurship (ICE)
Meeting 22-23 February 2007 Copenhagen, Denmark

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Introduction

1. One of the key interests in entrepreneurship related studies and those related to economic performance is the growth potential of enterprises. Policy makers, for obvious reasons, have a clear interest in creating the economic, cultural, fiscal, political and administrative conditions that foster the development of high growth enterprises. Many of these pre-conditions are generally thought to be understood; minimising red-tape, creating an entrepreneurial culture, removing barriers to competition etc but what is not so clear is what combination of conditions works best and, indeed, what types of entrepreneurs and businesses need to be fostered in order to maximise the potential number of high growth firms. The key reason for this situation is a lack of evidence relating to the numbers of high-growth enterprises. Indeed, hardly any official estimates of high-growth enterprises currently exist. This, of course, inhibits the ability of policy makers to assess the efficacy of their policies, explicit or otherwise, aimed at increasing the numbers of high-growth enterprises but it also limits the potential for learning from different approaches adopted in other countries.

2. In response to this situation, and the growing interest in this subject, a number of international initiatives have recently been launched. The OECD, for example, has recently developed a framework on business demography statistics[1] that includes a first request for high-growth enterprises based on employment growth. And, at a recent meeting of the OECD's Entrepreneurship Indicators Project Steering Group[2] it was agreed that the concept of growth would be extended to turnover in order to complement the employment based measure. The International Consortium on Entrepreneurship[3] (ICE) has also been at the forefront of these developments, and indeed, has provided generous funding to the OECD to continue to develop the concepts and data collection tools needed to better measure and compare high-growth enterprise statistics across countries.

3. This paper is a first step in that direction. A step that forms just one of many concurrent steps in the OECD's Entrepreneurship Indicator Project that seeks to establish, as its name suggests, indicators that measure entrepreneurship, in a comparable way across OECD countries, and potentially beyond. That is

[1] "A Proposed Framework for Business Demography Statistics", Nadim Ahmad, 2006.

[2] See also, http://www.oecd.org/document/44/0,2340,en_2649_33715_37719980_1_1_1_1,00.html and "Understanding Entrepreneurship: Developing Indicators for International Comparisons and Assessment" Tim Davis, 2006.

[3] ICE is an international consortium operating under the auspices of FORA, a Danish Agency

not to say that their have never been studies that have attempted to measure high-growth enterprises across a range of countries or within a country. There have been, see for example, Schreyer (2000), but what is being attempted here is the development and adoption of more systematic mechanisms that will allow the assessment and measurement of high-growth enterprises across countries and time on an on-going, rather than ad-hoc basis. The key to doing this is by developing accepted definitions of high-growth enterprises that are relevant and practicable, in other words, can be produced by national statistics offices.

History

4. The best known, and perhaps, earliest attempt at identifying high-growth enterprises, albeit as a spin-off, was David Birch's work in 1979 that suggested that conventional methods used at the time for determining the contribution of different sized enterprises to employment growth produced misleading results. Prior to Birch's work much of the analyses on firm growth assumed little if any inter-class movement of firms (and in so doing implicitly reduced the ability to identify creative destruction). Many of these analyses produced estimates of the contribution large enterprises made to growth in calendar year *t* by generally assuming that the same enterprises were large in years *t* and *t-1*. Because these enterprises were defined as large on the basis of their size in calendar year *t* however, Birch contended that these analyses produced biased results of employment growth: high estimates for large enterprises and low for small enterprises.

5. Birch instead defined enterprises by their size class in the base year of his study (the year from which growth rates were determined). On this basis, he argued that small enterprises were considerably larger employment creators than had previously been thought, and that they contributed the majority of employment growth (82%) in the US during the 1970s. However Birch's approach is not without contention, since it is one of two main views that dominate the study of the allocations of businesses to size classes when studying growth.

6. The main alternative to Birch's approach defines an enterprise's size on the basis of its average size in line with the underlying theory that the pattern of employment in enterprises fluctuates randomly, depending on variations in demand and other transitory factors, around a trend, and so that in equilibrium each enterprise has some typical size. Birch's approach (see also Kirzner, 1997) reflects a more turbulent system, where the business environment sees continuous changes in tastes and technologies say, and where enterprises continuously adapt to exploit opportunities; adjusting employment in the process. This view assumes that there is no equilibrium path towards which businesses converge.

7. Both approaches have their merits, and are in any case a digression of sorts because neither tackles, nor tries to tackle, the fundamental objective being sought in this paper, namely the issue of what exactly a high-growth enterprise is. However, assuming that a definition of high-growth does exist, the approaches do raise an important issue related to the characteristics of the enterprise: what size do they tend to be? This is an issue we will return to later.

8. Other studies have however explicitly attempted to measure high-growth enterprises. Typically these attempts embrace a convention. For example, the International Consortium on Dynamic Benchmarking of Entrepreneurship, led by FORA, a research and analysis division under the Danish Ministry for Economic and Business Affairs, defines high growth enterprises as all enterprises, less than five years old, with more than 15 employees at the start of the observation period and that had either 60% more employees and/or turnover at the end of the observation period.

9. Part of the rationale behind the 15 employee threshold is to avoid introducing biases that overstress the importance of small enterprises. To illustrate, if the number of employees is taken as the determinant for growth, an increase of one employee in an enterprise that starts with one employee will

reflect 100% growth, whereas an enterprise with 100 employees that takes on an extra 50 has lower growth. To focus on the former enterprise as being of greater policy and analytical interest than the latter is likely to be misguided. On the other hand, focusing merely on the absolute size of employment gains biases towards large firms.

10. Birch (1987) and Schreyer (2000), attempted to reduce the size of these biases by weighting growth by absolute employment gains. High growth enterprises were then defined as the 10% of enterprises who scored highest on this measure. Although useful in interpreting business dynamics within economies, for example the measure provides information on the most successful enterprises and their characteristics, such as size and sector, it is much harder to interpret these measures across countries. Every country, for example, irrespective of the policies put in place to foster the number of high-growth enterprises will have a top 10% of growth enterprises. That is not to say, however, that the approach is without some merit since it will always be of interest to understand what makes some companies more successful than others within a national context but, of course, learning from international best-practice is non-trivial with such an approach.

11. Outside of official statistical sources measures of high-growth companies often focus on stock-market valuations. Although useful indicators these measures tend to factor in expectations about future growth prospects, and are further complicated by liquidity conditions that differ across markets and indeed businesses. Furthermore, growth rates of listed companies using these measures usually include endogenous growth factors such as, mergers, take-overs etc, rather than exogenous (organic growth) factors, so, are of limited interest to high-growth related studies.

12. Two of the best known measures of high-growth enterprises are the Inc.500 and Europe's 500. The former provides an indicator of the top 500 growth firms (with at least a 4 year sales history) in the US based on turnover growth over a three year period. The latter is based on employment growth, also over a three year period, using the Birch index, which weights growth by absolute employment gains to reduce the bias towards smaller firms, and shows the top 500 EU and EFTA firms on this basis.

13. A more recent study, Hoffman and Junge (2006), tried to create indicators of high growth firms across a number of OECD countries using private data sources, namely Bureau van Dijk (BvD) data. The approach taken was to define high growth by convention (60% growth in employment and additionally deflated turnover over a 3 year period). Their analysis raised a number of important issues central to the measurement of growth, for example: How should a firm be defined? How should the growth of multinationals be measured? Should there be a distinction between organic and other growth? How should turnover be deflated? Is the coverage of the BvD data the same across all countries or do the thresholds for inclusion differ?

Defining High-Growth Firms

14. The literature points to, in effect, two approaches. The first targets a certain per cent or number of firms and defines these as high growth. The second tries to define a level of growth above which firms can be defined as high-growth. Both approaches have their merits. But the second must be seen as preferable if the objective is to identify the firms that grow most and the conditions that foster this growth.

15. Determining the threshold however is at the same time trivial and non-trivial. Non-trivial because it needs to be meaningful, and the absence of current comparable information hinders such an approach. Trivial, because, ultimately, it is about choosing a threshold based on a convention. This is the approach used by Hoffman and Junge, who took 60% growth over a three year period as their threshold, and demonstrated that, for employment based growth, in most countries about 1-3% of firms were high growth. The numbers were a couple of percentage points higher where turnover was the basis, with Korea coming

in significantly higher, possibly reflecting comparability problems or perhaps the deflators used. See Table 1 below.

High Growth Rates in Selected OECD Countries – Employment and Turnover Bases

Country	Real Turnover basis 2004	Average Real Turnover 2002-2004	Employee basis 2004	Average Employee 2002-2004
Austria	2.90	3.19	1.14	0.87
Belgium	6.32	6.91	2.25	3.17
Denmark	5.42	5.41	2.35	2.39
Finland	6.53	7.14	2.47	3.03
France	4.87	6.54	2.05	2.63
Germany	2.53	3.18	0.98	0.97
Greece	10.00	10.23		
Ireland	29.63	22.48		
Italy	5.88	7.00	2.97	5.80
Japan	19.95	20.55	5.51	5.02
Korea	26.12	31.98	9.67	10.57
Netherlands	1.14	3.29	1.69	2.33
Norway	4.49	5.22	1.39	1.79
Poland	15.07	13.50	1.76	2.89
Portugal	7.14	7.17		
Spain	8.46	11.16	3.53	4.23
Sweden	5.31	7.21	2.81	3.63
Switzerland	3.33	8.61	5.56	5.26
United Kingdom	11.13	12.52	5.78	6.50
United States	24.32	27.02	5.00	5.28

Source: Hoffman and Junge, 2006.

16. The key question therefore, once a threshold is determined, is whether the basis for measuring growth should be turnover, employment, some other monetary variable such as value-added or profits or perhaps a composite type approach that combines employment and monetary variables. Before considering the pros and cons of each measure however, it is instructive to consider first how a business should be defined.

Defining the Business

17. Central to the issue of high-growth firms is the definition of a firm. This matters because in an increasingly globalised world, firms increasingly generate growth in new markets. Firms that choose to grow by exploiting opportunities in new markets are clearly being entrepreneurial but how relevant is this to domestic policy makers, who are primarily interested in increasing employment and income at home?

18. Furthermore, another important consideration reflects the practicalities of creating measures based on a firm's global growth. National Statistics Institutes, particularly in OECD countries, have very well developed business registers that define businesses and measure their employment and output on the basis of activity in the nation state. Although work has recently begun within the EU, mainly, to explore whether these registers could be linked across nation states to identify multi-national firms, it will clearly not be possible to reflect the growth of these firms in other markets such as China and India say, which are

not currently in scope of this EU focussed study. Moreover, much depends on how much autonomy a parent company decides to give its subsidiary, meaning that in some cases the creation of a new foreign subsidiary will be treated as growth but in others it will not. These practical difficulties, quite aside of the policy arguments, on their own, restrict the potential for defining firms on the basis of their global production network.

19. Countries use a number of different approaches to defining firms, in practice, however, the definitions boil down to two: the Enterprise and the Establishment. The decision as to which of the two is preferable for the measurement of high-growth firms follows the arguments made in Ahmad (2006), which set out to establish the preferred measure of a firm in the context of other business demography statistics such as birth, death and survival rates, and recommended that enterprises formed the basis of measurement, and, so, will not be repeated here.

Country-Size Bias

20. However it is important to recognise that defining businesses on the basis of national frontiers necessarily introduces a bias in estimates of high growth enterprises based on the economic size of a country. Self-evidently an enterprise that starts up in a large country has greater scope to expand within that country than an enterprise that starts-up in a small country and that will be more likely to expand by creating new enterprises in different countries. Assuming open markets the scope for growth on a global level by the Enterprise Groups, will however be the same, all other things equal, which suggests that enterprise group growth rates would also be useful. But, as described above, the more limited policy uses and practical difficulties rule this approach out for now.

21. The implication of such a bias suggests that, despite its limitations, an approach that focussed on the top X% of enterprises within an economy may not be without merit. Having said that, whatever the approach used, be it growth above a threshold or a top X%, there will remain the possibility of a sectoral 'bias' if an enterprise is used as the statistical unit, and this needs to be fully understood. A hairdressing company for example can't really export its services, and can only realistically expand by creating new establishments (enterprises, in the case where these are located abroad), whereas goods industries and many other non-personal services can grow by increasing production for the export market without necessarily creating new establishments/enterprises. This means that there may be 'biases' that affect sectoral comparisons of high-growth enterprises across countries. It's perhaps more important to note however that 'bias' is used loosely in this sense because, strictly speaking, there is no bias. If policy makers are interested in employment provided or revenue generated within their own economy then estimates of high-growth based on the Enterprise definition provide an accurate measure of these policy targets.

Organic Growth versus Growth by Acquisition

22. Another important issue concerns the way in which firms grow. Firms (Enterprises) can grow organically or via acquisition. Both are clearly of import to entrepreneurship studies but businesses can also grow via mergers, and it is not always possible to differentiate between acquisitions and mergers. Ideally any measure of growth would attempt to categorise these events separately, the key focus being on organic growth, with a second indicator focusing on acquisition orientated growth, and lastly growth through mergers.

Growth Variables

23. The key issue concerns the target for growth. Most studies use employment or turnover. The OECD framework on business demography statistics expressed a preference for employment based

measures on largely pragmatic grounds, but, analysts and policy makers, often view high-growth enterprises through a turnover, rather than employment, prism and it is also fair to say that employment based measures do not also have some limitations.

Turnover

24. Clearly the study of turnover growth is important but there are a number of factors which complicate cross-country and inter-temporal comparisons when turnover thresholds are used. Inflation is the first; which introduces potential biases between high and low inflation countries, between high and low inflation periods; and between high and low inflation products; and, so, industries, especially commodity industries. The second reflects the relationship between turnover and income (profits, value-added) across industrial sectors. A retail enterprise for example that shifts its sales from low value products to the same quantity of higher value products will not necessarily increase profits nor employment, particularly if the shift is dictated by changes in consumer tastes.

25. Many of the problems related to the use of monetary variables can of course be ameliorated using deflated measures but it is important to note that this is not a complete panacea as price indices, particularly for services are notoriously suspect. Moreover it is important to bear in mind that companies with considerable dependence on export markets will also be susceptible to changes in exchange rates, requiring a degree of information rarely available at the firm level. Deflation of turnover for example would need to differentiate separately between goods and services sold to the domestic market and those sold abroad, since producer price indices typically reflect the average price of a good or service. Indeed one needs to recognise that all price indices reflect the average price of a product sold by all firms selling that product, and, so assume that price changes in any particular firm follow the industry average. Real turnover growth in a firm that increases turnover by adopting an aggressive pricing policy for example will be underestimated if average prices indices for the sector are used for deflation.

Value-added

26. A key question in this context however concerns the notion, or very meaning, of real growth. Is it of interest for policy makers to identify and encourage growth in firms that increase real turnover by cutting prices, if these price-cuts also result in corresponding declines in current price income and productivity levels? The consequence of such a policy may be to increase global competitiveness, which is a good thing, but, ultimately, policy makers want to identify those companies that are able to additionally maximise national income. Typically, and increasingly in OECD economies, this is by encouraging high value-added production, and so it may be better to consider value-added as being the preferred target variable for growth. But with value-added the issue of deflation remains, and moreover, the data for value-added at the firm level is not always readily available across countries and indeed firms, especially smaller firms. Theoretically, in a national accounts context at least, estimates of value-added are arrived at via double-deflation. But, although theoretically correct for the national accounts and many forms of growth-accounting analysis, double-deflated estimates may not be the perfect approach when defining high-growth enterprises.

27. For example consider a company that uses 100 units of inputs with an average price of 10 in year t to make 10 units of output worth 150, and so value-added = 500. Now consider it's position in year t+1, it purchases 200 units of inputs with an average price of 11, and sells 20 units of output worth 125, and so current price value-added has fallen to 300, 40% less in current prices than a year earlier. But constant price (double-deflated) value-added would have doubled, (as would have constant price turnover in this example). In constant prices this company would be viewed as a high-growth enterprise but the question must be, should it, if current price value-added falls? In this context it may be preferable, and certainly easier, to consider deflation in a different way. Namely, by deflating value-

added using a GDP deflator, or even Consumer Price Index, because ultimately the issue is what can nation states, businesses, entrepreneurs, governments, buy with the income they generate. This is a slightly different approach to that used in conventional growth economics, for example productivity analyses, but reflects more a utility perspective. Entrepreneurs and policy makers are, of course, interested in increasing productivity say but typically, as part of an overall objective of maximising current price income and profits; whose value, compared to earlier years, is best appreciated from a utility maximising perspective.

28. One thing that deflation cannot overcome however is the fact that turnover is a gross concept and that some sectors, particularly in the distribution industries, can generate considerable growth in turnover without any real change in employment or income. Gross value-added is, in this sense, a much better measure but, as already indicated, suffers from the fact that not all statistical offices are able to provide estimates of gross value-added at the enterprise level: typically estimates of gross value-added are generated at the industry level. In the US, Canada and Korea for example estimates of value-added at the firm level are based on the census concept, which means that expenditures on non-industrial services, and which have grown considerably in most developed economies, are included in value-added. This tends to negate its use as an indicator of high growth.

29. The way in which a company organises itself can also present problems, where turnover measures are concerned. A company for example that chose to break itself up and charge for exchanges of goods and/or services between the new autonomous components (enterprises) would result in considerable turnover growth in the components, despite the fact that (the organisational structure apart) very little had changed. Although, that said, the measurement problem could be largely overcome so long as one recognised the demographic event (break-up) as not resulting in the birth of a new enterprise (which is the approach advocated in the OECD and Eurostat frameworks on business demography indicators). More problematic however is the case where enterprises within the same Enterprise Group do not charge, or charge below market rates, for goods and services provided to each other in one period (and that also provide goods and services to consumers outside of the Enterprise Group) subsequently deciding to charge market prices for goods and services exchanged between the Enterprise Group entities; although these instances are not expected to be particularly significant.

Employment

30. Employment based measures are less affected by many of the problems that affect turnover, in particular those related to price change. But they are not in themselves perfect. Ideally the units of employment, the number of people engaged or number of employees, would be on a full time equivalent (FTE) basis but this is unlikely to be practical to measure on a consistent basis across firms and countries, particularly because in many countries such information is not even collected. The key concern with employment based measures however is that they tend to be biased against firms that grow through labour productivity gains, an area of considerable policy interest, and, so, there is a danger that indicators based exclusively on employment, will lead to decision makers devising policies that have an adverse impact on productivity growth.

Composite Indicators

31. Clearly there are pros and cons with both turnover and employment based measures. Employment based measures are preferable from a practical perspective because they are easier to measure, and, indeed, they are preferable if the policy objective is increasing employment. Turnover based measures are more closely linked to what the entrepreneur is trying to grow however, and indeed, is the measure that is closer to what the business community, share-holders, venture capitalists etc would use to

identify high growth companies and, so, cannot be ignored. A key question therefore is: Is it possible to create a composite indicator that marries turnover and employment concepts?

32. One relatively simple possibility is to take the square root of Employment and Turnover based indicators (similar to the Fisher price index, which takes the square root of Paasche and Laspeyres price indices).

33. In other words one could define the target as when

$$\sqrt{\frac{\mathrm{Emp}_{t+n}}{\mathrm{Emp}_t}\frac{\mathrm{Trn}_{t+n}}{\mathrm{Trn}_t}} \quad \text{(i)}$$

is greater than some predetermined threshold (where Emp_t is employment Trn_t is deflated turnover in time (year) t).

34. This can be decomposed to

$$\frac{\mathrm{Emp}_{t+n}}{\mathrm{Emp}_t}\sqrt{\frac{\mathrm{Emp}_t}{\mathrm{Emp}_{t+n}}\frac{\mathrm{Trn}_{t+n}}{\mathrm{Trn}_t}} = \frac{\mathrm{Emp}_{t+n}}{\mathrm{Emp}_t}\sqrt{\frac{\mathrm{L\,Pr}_{t+n}}{\mathrm{L\,Pr}_t}}$$

where LPr_t is equivalent to labour productivity in year t, and LPr_{t+n} is equivalent to 'labour productivity', with turnover, rather than output or value-added say, in year t+n at year t prices.

Size issue

35. A feature that dominates almost all studies of growth in businesses is the fact that small businesses will necessarily dominate. A company with one employee for example is much more likely to double its number of employees than a business with 10,000 employees for example. As such, indicators relating to the number of high-growth enterprises typically embody a minimum size threshold. The FORA approach for example takes 15 employees as its threshold. However it needs to be recognised that choosing an index based on a size threshold might reinforce the tendency for large countries to have a higher proportion of high-growth enterprises, as mentioned above, because the larger the threshold the smaller the number of companies to choose from.

36. A possible alternative to the size-class threshold is to introduce a varying threshold of growth, above which an enterprise is deemed to be high-growth, and that declines the larger the enterprise. For example one might say that enterprises with 1-5 employees are high growth if they treble employment over a short period of time, whereas enterprises with 1000 or more employees are high growth if they increase employment by 10% over the same period.

37. To some extent this is what the Birch index does, which is defined as

$$m = (x_{t_1} - x_{t_0})\frac{x_{t_1}}{x_{t_0}}$$

where x_{t_1} and x_{t_0} denote size (typically employment) at the end and the beginning of the sample period. It can be demonstrated that this measure, while still dependent on firm size, always gives rise to a smaller bias towards any size class than either the relative or the absolute measure of

growth. This, of course, needs to be used in combination with a threshold that takes the top X% of businesses based on this index, whether the index uses employment or turnover as the growth variable.

A High Growth Definition

38. The discussion above illustrates that no single measure is capable of providing all of the answers. The OECD framework on Business Demography Indicators took a fundamentally pragmatic approach that took employment as the target measure of growth, on the grounds that most statistical offices would be able to produce this indicator, and relatively quickly, providing important information, in the absence of any current information relating to high-growth rates across OECD countries.

39. The approach advocated in the framework was for NSOs to provide information on employment growth broken down by size class and employee growth bands. All enterprises with more than ten employees were considered in scope, irrespective of their age. Many studies focus only on young firms but these often assume that older firms are not entrepreneurial or are of little interest in its study. The framework took a different view; namely, retaining the reality that older firms can be innovative and entrepreneurial. An extract of the recommendation used in this framework is provided below.

> The recommended size-class bands are 10-19, 20-49, 50-249 and 250-499, and 500+, and the recommended growth bands are 0-10, 10-20, 20-30, 30-40, 40-50 and 50+ average annualised growth over the observation period, where the observation period should be no more than, and preferably, three years; this is partly because the longer the observation period the greater the difficulty in ensuring that businesses are not affected by other demographic events. In this way high growth enterprises, broken down by size classes, can be defined by users in line with the growth bands. It is possible to consider smaller size bands but it is not clear what benefit these would provide. Enterprises with less than 10 employees are not included as to do so would create an indicator of high growth enterprises that would potentially be swamped by small enterprises.
>
> Ideally, for each size class, the breakdown by size band should show the percentage of enterprises in each growth band, as a percentage of all enterprises with 10 or more employees and the total working age human population. Further breakdowns of enterprises by characteristics, such as legal form and industry are also recommended. The breakdown by industry is particularly important because in many sectors, for example pharmaceuticals, potential growth of small enterprises is restricted by development and R&D costs say.
>
> The definition for growth should define enterprises on the basis of their size class at the beginning of the observation period and growth must exclude any changes due to other demographic events such as mergers, take-overs and break-ups. In recognition that this level of breakdown may present disclosure problems, a high growth definition, given below, should be attempted as a minimum.
>
> *All enterprises with average annualised growth in employees greater than 20% per annum, over a three year period, and with more than 10 employees in the beginning of the observation period, should be considered as high growth enterprises. These enterprises should be broken down by as detailed a size class band as possible, legal form and ISIC industry, and shown as a percentage of all enterprises with more than 10 employees at the start of the observation period and as a percentage of the human working age population..*
>
> Understanding the mechanisms that lead to enterprises contracting is also of considerable policy interest. The study of enterprise failure has long been of interest but is complicated by the difficulty in obtaining information from entrepreneurs about the factors that caused failure, since commonly the

information concerning the entrepreneur, such as address, is related to the enterprise, and so the entrepreneur is difficult to track. It may be easier however to track 'failing' enterprises. As such national statistics institutes should be encouraged to additionally record those enterprises, and their characteristics, that reduce employment by more than 15% per annum on average over a two year period.

40. Collection amongst OECD countries has now been begun on the basis of the simplified position (all businesses with 10 or more employees with average annualised growth of greater than 20% per annum in the preceding three years).

41. At a recent meeting of the Entrepreneurship Indicators Project Steering Group (December 2006) however, members encouraged the OECD to also consider collecting statistics based on turnover as a complement to the employment based indicators. This request was accepted by the OECD who have now begun to collect estimates of high-growth based additionally on turnover, using the same thresholds as for employment based indicators (10 or more employees, 20% per annum annualised growth in the preceding 3 years).

42. The collection of these indicators will improve tremendously the current knowledge relating to high-growth enterprises across OECD countries. But as the discussion above illustrates more can be done. Certainly it would be useful to investigate whether the composite indicator could be produced, at least by some countries. Birch indices of turnover and employment (targeting perhaps the top 5% of enterprises in any country) would also be extremely useful. Certainly they will ameliorate the country size bias, and so should be pursued.

Gazelles

43. In practice, high growth businesses will be typically young; this is partly a function of the learning and expansion process that young businesses typically undergo – grow, to reach some optimal size or die – but it also partly reflects the correlation (bias) between size (small) and growth (high) potential. Young high growth businesses are typically referred to as gazelles in the literature. Gazelles are in effect a sub-set of high-growth firms, differentiated on the basis of age, and, where the age is fundamentally a question of convention. The OECD framework sets this convention as 5 years of age, and where the birth of a firm is consistent with the principles set out in the OECD framework of business demography indicators.

Conclusion

44. As illustrated above, a number of options lend themselves to the measurement and cross-country comparison of high-growth enterprises. Some are more pragmatic than others but all tell only part of the story. The approach recommended in this paper is therefore to consider a suite of indicators that complement each other and so collectively can be seen as providing the whole story.

45. In this sense the recommendation is for indicators of high-growth based on both the employment and turnover measures described above with a 20% per annum growth threshold. Indeed these indicators are currently the focus of collection by the OECD and it is hoped that preliminary estimates for a number of OECD countries will become available during the course of 2007.

46. Ideally turnover based measures would be based on deflated turnover growth the recommendation in this paper however is to consider this extension after indictors based on current price turnover statistics become available.

47. The paper also recommends that indicators based on the Birch index are also explored by NSOs and indeed the composite indicator, and that these developments be included for further exploration with the OECD's feasibility study for accessing micro-level data.

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