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## **FOREWORD BY THE CHAIRMAN OF THE WELSH DEVELOPMENT AGENCY, ROGER JONES**


The Global Entrepreneurship Monitor (GEM) is a way to measure and explore economic growth in the countries who subscribe to the programme.

With 39 countries now members of the GEM consortium, Wales can use this as a real measure of how entrepreneurial it is compared to the other members.

There are many positives to be drawn from this years' report, especially the first evidence of an attitudinal shift in the population, with a doubling of the perception of individuals that now is a good time to start a business to 22%, and the fact most of these individuals are doing so out of spotting an opportunity rather than out of necessity.

Whilst there are some points of encouragement in the report, there are other areas upon which we should continue working on. There has been a small decline in the number of individuals involved in entrepreneurial activity, however this is not dissimilar to the other countries in the project, given overall global economic conditions.

The Entrepreneurship Action Plan (EAP), delivered by the Welsh Development Agency, is a long-term plan to improve the economic prospects of Wales through Entrepreneurship. The GEM study is a tangible benchmark to help steer us in the right direction, and we look forward to next years' study to see more evidence of the impact of the EAP.



Roger Jones  
Chairman, Welsh Development Agency

**GEM 2002 CO-ORDINATION TEAM, NATIONAL TEAMS AND SPONSORS**

Unit	Location	Members	Financial Sponsorship
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## EXECUTIVE SUMMARY

### Background to GEM in 2001

- The Global Entrepreneurship Monitor (GEM) project was created in 1997 as a joint initiative between Babson College - the leading centre for entrepreneurship in the United States - and London Business School. The principal aim of GEM is to bring together the world's best entrepreneurship scholars to explore and understand entrepreneurship and its link to economic growth.
- This is the third year that Wales has taken part in the study, along with thirty-eight other nations around the World (including Scotland). In addition, London Business School also prepared a report for Northern Ireland in 2002 because a separate adult population survey was undertaken there. The results for the separate region of Northern Ireland are not reported as part of the calculations below, although theirs, along with all national reports, can be downloaded from the GEM website at [www.gemconsortium.org](http://www.gemconsortium.org). The primary data for the study of Wales was collected from an adult population survey of 2000 individuals, together with 36 interviews with Welsh experts on entrepreneurship.
- In Wales, the GEM research project is headed by Professor Dylan Jones-Evans, Director of the Centre for Enterprise and Regional Development at the University of Wales Bangor. His co-researcher on the project is Professor David Brooksbank, Director of the Welsh Enterprise Institute at the University of Glamorgan. Both individuals are actively involved in the development of entrepreneurship research within Wales, being responsible for undertaking detailed studies supporting initiatives such as the Entrepreneurship Action Plan for Wales, Enterprise College, Enterprise Club, Wales Fast Growth Fifty initiative and the Wales Spin-Out Programme. The Welsh GEM research has been supported financially by the Welsh Development Agency, and will help inform the future development of the Entrepreneurship Action Plan for Wales.
- The GEM project is an annual research event that will, over time, build up a longitudinal international database to inform policy-makers, academics and practitioners of the relevance of entrepreneurial activity to economic development. The opportunity to benchmark Wales against the major economies of the World is to be welcomed, giving us the opportunity to improve our understanding of entrepreneurship in a Welsh context, and to participate in the leading forum for policy debate on entrepreneurship globally.

### How entrepreneurial is Wales?

- **The rate of total entrepreneurial activity in Wales has declined since 2001.** The main GEM index now shows that approximately 4 per cent of adults in Wales (or 76,000 people) are now engaged in entrepreneurial activity – either in actively entering the start-up process or running a new small firm. Whilst this is down from 6 per cent in 2001, this fall is not unusual in the context of a similar decline in entrepreneurial activity across the other GEM nations globally in the period 2001-2002.
- **Most entrepreneurs in Wales are opportunity driven.** Over two thirds of those engaged in entrepreneurial activity in Wales were driven by a desire to exploit a new business opportunity rather than out of necessity. However, these individuals are predominantly male and remain grouped in the main entrepreneurial age bracket (25-44 years old).
- **There are less men in Wales engaged in entrepreneurial activity in 2002.** Relative to last year, the decline in entrepreneurial activity in Wales has been amongst male entrants into new venture creation. Indeed, female activity has remained almost steady whilst male activity has declined by almost 40% since 2001.
- **Wales has a low rate of individuals involved in entrepreneurial activity.** Only 2.1 per cent of the Welsh adult population (or approximately 37,000 individuals) were engaged in the first processes of entrepreneurial activity at the time of the survey. This represents a decline of around a third in entrepreneurial activity, roughly the same as the decline in the average GEM nation globally. However, the rate is higher than for GEM Wales 2000, where the start-up rate was 1.4 per cent.



- **Wales is at the average for small business management in Europe.** Wales has a new firm prevalence rate of 2.0 per cent of the adult population engaged in running firms less than 42 months old in 2002, an identical rate to 2001. Whilst 2.0 per cent seems low in comparison to many leading nations, it nevertheless places Wales firmly in the average for European nations.
- **Welsh Business Angel activity has increased six-fold since 2001.** In 2002, 1.2 per cent of the Welsh adult population identified themselves as informal funders of start-ups, representing a 600% increase in business angel involvement in supporting new firms on 2001 – an important indicator of entrepreneurial activity.
- **Perception of opportunity and entrepreneurial skills has increased in Wales.** One of the more significant changes from last year's GEM study is that the perception of opportunity (individuals believing that there will be good opportunities to start a business during the next six months) has doubled to 22 per cent of the population. In addition, the number of adults in Wales who believe that they have the knowledge, skills and experience to start a business has increased from 28 per cent in 2001 to 40 per cent in 2002. Both of these indicators can be rightly interpreted as a positive indication of confidence in the development of entrepreneurship in Wales.

### Key policy recommendations

- **Move up a gear in support for entrepreneurship.** This year's results suggest that, despite a global downturn, Wales needs to improve entrepreneurial activity to catch up with other leading nations. In order to target resources more efficiently, there needs to be a thorough review of existing Entrepreneurship Action Plan (EAP) activities to ensure that the programmes supported are developing a greater entrepreneurial culture that lead to more start-ups, focusing on those initiatives that are actually making a difference to the growth in entrepreneurship.
- **Ensure that the provision of financial support continues for all firms.** The study indicates that whilst the provision of finance is not a major issue for the vast majority of the SME sector, there is still a vacuum in terms of the provision of larger equity provision for the development of high growth firms. This needs to be addressed either through internal policy developments or stronger links to external venture capital providers.
- **Ensure that under-represented groups are supported whilst not neglecting mainstream support for start-ups.** Whilst Wales has done better in terms of gender balance than last year, this is a result of a substantial decline in the number of males participating in entrepreneurial activity rather than an increase in the number of women establishing new businesses. Therefore, whilst it is important that any gap in provision of support is being closed under various measures of the Entrepreneurship Action Plan (especially given the importance of women in closing the entrepreneurial activity deficit within many nations), there must also be a careful assessment of whether mainstream programmes are ensuring continuing entrepreneurial activity amongst males.
- **Ensuring a higher conversion rate from entrepreneurial intention into new businesses.** This must be one of the main foci of the Entrepreneurship Action Plan during the next year. The results from the last three years of GEM suggest that there are now more individuals in Wales perceiving opportunity and believing they have the skills to establish a new business. However, this is not being translated into new firms (at least according to the current data). Therefore, there must be an increased focus in the range of start-up programmes (Potentia, KEF, Business Birth rate) on getting a higher conversion rate from 'good intentions to become an entrepreneur' into actual start-ups.
- **Continue support for entrepreneurship at a national and local level.** The National Assembly for Wales, along with local authorities, is perceived as providing policy and programme support for entrepreneurs and their businesses. This must continue as it can make a real difference to the acceptance of a strong entrepreneurial culture within Welsh society at all levels.

- **Greater linkages between private and public sector support for enterprise.** One of the most difficult challenges will be the co-ordination of business support from the public and private sectors. It is certainly the view that whilst the commercial and professional infrastructure in Wales is held in high regard, it is relatively underutilised in partnership with public sector agencies in ensuring that entrepreneurial ventures become more efficient, effective and competitive.
- **Improvement in the organisation and delivery of enterprise education and training.** There needs to be greater co-ordination between (and across) the different educational sectors to ensure that schools, colleges and universities are 'singing from the same hymn sheet' when it comes to the development of enterprise within the educational system and, perhaps, most importantly, outside of it.
- **Strengthen the current links between enterprise and academia.** Whilst initiatives such as the Innovation Action Plan are welcomed, there is still much to do to ensure that the barriers that restrict interaction between universities and Welsh entrepreneurs are overcome.
- **Emphasise the need to change the perception that society and culture in Wales is anti-entrepreneurship.** Despite improvements in some areas, there is an overwhelming perception that Welsh society is not supportive of entrepreneurial success, does not encourage creativity and innovation, and does not emphasise autonomy and personal initiative. This means that there has to be a longer term commitment by policymakers in ensuring that the positive message regarding entrepreneurship permeates throughout Welsh culture.
- **More detailed study of Welsh entrepreneurial activity required.** Whilst the results of this current GEM study are important in monitoring and improving the development of an entrepreneurial economy within Wales, there are certain limitations to the data gathered. For example, having such a small sample means that very little detailed analysis can be undertaken of entrepreneurial activity. Therefore, the study needs to be expanded for 2004 into a more detailed study of entrepreneurship, working closely with partners at a local and regional level, to ensure that GEM can give a more detailed account of how entrepreneurship is developing within all parts of Wales.

## INTRODUCTION TO GEM

The Global Entrepreneurship Monitor (GEM) describes and analyses entrepreneurial activity across a large and growing range of nations. Begun in 1997 as a joint initiative between Babson College in the US and London Business School, its principal aim is to produce internationally comparable data on the elusive concept of entrepreneurship.

The global GEM study focuses on answering three fundamental questions:

- Does the level of entrepreneurial activity vary between countries (and regions within countries) and, if so, by how much?
- Does the level of entrepreneurial activity affect the national or regional rate of economic growth?
- What makes a country (or region) entrepreneurial?

The GEM conceptual model builds a cogent argument for a link between the activity of the entrepreneurial sector of the economy and national economic growth. It is presented in Appendix A.

This is the fourth annual GEM cross-national assessment of entrepreneurial activity. The programme has expanded from ten countries in 1999, 23 in 2000, 31 in 2001, to 39 in 2002. Wales took part in GEM for the first time in 2000, along with Scotland. These two countries remain the only 'regions' in the study, with Northern Ireland anticipated to join in 2003. The countries included in the 2002 assessment are:

- Western Europe - Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Israel, Italy, The Netherlands, Norway, Spain, Sweden, Switzerland, UK, Scotland And Wales
- Eastern Europe - Croatia, Hungary, Poland, Russia and Slovenia
- Asia – Developed - Chinese Taipei (Taiwan), Hong Kong, Japan and Singapore
- Asia – Developing - China, Korea, India and Thailand
- Latin America - Argentina, Brazil, Chile and Mexico
- Other English Speaking - Australia, Canada, New Zealand, South Africa and the United States

Data for the GEM Wales research study was gathered from three main sources:

1. A survey of the adult population
2. In-depth interviews with Welsh experts on entrepreneurship
3. A selection of economic and labour market data from a variety of sources

For GEM 2002, over 100,000 individuals were surveyed and over 1000 experts interviewed in 39 countries around the world. This means that GEM covered more than three-fifths of the world's population and 92 per cent of its gross domestic product. In Wales, 2000 individuals were surveyed and 36 national experts were interviewed.

Summary results of the global GEM 2002 study were published in November 2002<sup>1</sup> and the findings can be summarised as follows:

- **Entrepreneurship is a massive global phenomenon.** The results of the Global study suggest that about 12 per cent of adults aged 18-64 are entrepreneurially active in the 39 nations. This translates to approximately 286 million people! If you extrapolate those results up to produce an estimate for the whole world, you arrive at a figure of about 460 million people who are involved in entrepreneurship.
- **The level of that activity varies from country to country.** The levels vary from about 3 per cent of the adults in Japan up to more than 18 per cent in India and Thailand. The lowest levels are recorded in the developed Asian countries and Central Europe. They rise in the EU, then the other English speaking countries, with the highest in the developing Asian countries. This suggests that patterns of growth entrepreneurial activity can be characterised by both stages of a nation's development as well as cultural norms.
- **Entrepreneurial activity is affected by global events over time.** The 2002 Global report indicates a fall between 2001 and 2002 of approximately 25 per cent in entrepreneurial activity. This change is seen as the result of global instability in economic growth and links entrepreneurial activity to more general macro-economic conditions. It is worth noting that the main adult surveys took place prior to the September 11th terrorists attacks in 2001, whilst clearly the 2002 survey came after. Since the GEM measure of entrepreneurial activity is in some sense a measure of aspiration or intent as well as a simple count of new business, there would seem to be a clear link between actual, personal activity to create new business and the general sense of optimism and security in the country.
- **Opportunity entrepreneurship appears to outweigh necessity entrepreneurship.** Approximately two-thirds of entrepreneurs were found to be starting their new firms to pursue opportunities in the market, whilst the remaining third did so because they had no better choice. This proportion varied depending on the stage of development of the nation. In less developed countries up to a half of new businesses were created out of necessity.
- **The relationship between entrepreneurship and economic growth is extremely complex.** The Global report argues that there appears to be increasing evidence that there is a statistically significant link between entrepreneurial activity and national economic growth. However, this type of cross-national survey must be conducted for some years before sufficient time-series data is collected that will allow robust tests of this hypothesis to be completed. It remains that case however that the evidence for a strong link is compelling.
- **The majority of new businesses replicate existing business ideas and are formed by men.** The Global study showed that men were twice as likely to be involved in entrepreneurial activity as women and that 93 per cent of new firms replicated existing business activity.

This report focuses exclusively on Wales and builds on last year's comprehensive benchmark research to:

- present the GEM 2002 Wales findings
- assess the position of Wales relative to the GEM nations taking part in this year's study
- compare the results with last year's Wales GEM report to determine how entrepreneurship is developing within Wales
- develop a public policy agenda for the development of entrepreneurship within Wales

## HOW ENTREPRENEURIAL IS WALES?

### THE GEM MEASURES OF ENTREPRENEURIAL ACTIVITY

This report focuses on the entrepreneurial activity taking place in Wales. However, it is part of a global study reflecting the activity of over 450 million people. In this third year of participation, we can begin to compare some of the trends in global, as well as regional, activity and examine the impact of some of the interventions that have been designed to boost enterprise and entrepreneurship over the past few years.

While the original focus of the GEM research programme was (and still remains) on cross-national comparisons in entrepreneurial activity, the current global level of activity suggests that the phenomenon is substantially more prevalent than first expected. Not only may entrepreneurship be a major feature of national economic growth, but it also appears to involve a large proportion of adults at some time in their working lives. The capacity to compare countries at different levels of development and in different states of transition suggests multiple roles for and diverse consequences of entrepreneurial activity. The primary output of GEM is intended to be a comparable measure of entrepreneurial activity. This measure is not only comparable across countries each year – allowing a ranking of nations to be established – but also across time – allowing individual countries to chart their progress against a reliable benchmark.

GEM defines entrepreneurship quite narrowly as 'Any attempt at new business or new venture creation, such as self-employment, a new business organisation, or the expansion of an existing business by an individual, teams of individuals, or established businesses.' This means that we are considering people who are either in the process of start-up or who have actually recently started a new firm.

GEM constructs measures of four areas of entrepreneurial activity. The first is the level of start-up activity – defined as the proportion of the adult population aged 18-64yrs) who are actively participating in the process of start-up. We call these individuals nascent entrepreneurs and the proportion of the population engaged in this activity we label as the nascent entrepreneurship prevalence rate.

The second area is that of new firms. Here we measure the proportion of the population which is currently active in running a new business – the new firms prevalence rate – and define new as businesses which have been running for less than 42 months.

By combining these two measures (nascent and new) we can construct the Total Entrepreneurial Activity (TEA) rate for the country, which constitutes the main output index of this research. Care is taken when compiling this measure not to double-count individuals who may be both nascent and new firm entrepreneurs and for this reason the TEA index will not always equal the exact sum of the other two measures.

Finally we look at the proportion of individuals who can be classified as 'business angels.' In other words, adults who have provided funding for start-ups, whether that be for family, friends or complete strangers. This gives us a feel for the 'informal' venture capital market that exists in Wales, since a high level of activity has often been linked with successful and dynamic economies with high levels of entrepreneurial activity.

Once again for GEM 2002 we decompose the primary motivations behind an individual's decision to engage in entrepreneurial activity. In particular we have look at measures that highlight whether the activity was based on 'opportunity' or was born of 'necessity'. The Opportunity Entrepreneurship prevalence rate is calculated as the proportion of respondents who are classified as nascent entrepreneurs and indicated that they were attempting to start the new business in order to pursue a new business opportunity. The Necessity Entrepreneurship prevalence rate is the proportion of nascent entrepreneurs who responded that they were attempting to establish the new firm because there were no better choices of work.

## BUSINESS START-UP ACTIVITY

### START-UPS

In common with almost every country in the GEM study, Wales has a lower level of start-up activity in 2002 than in 2001 (with the decline in Wales being similar to most other GEM nations). Therefore, in 2002, Wales had 2.1 per cent of the adult population (approximately 36,000 people) engaged in the first processes of entrepreneurial activity at the time of the survey, compared to 3.1 per cent in 2001, a decline of approximately 32%. This gives a ranking of 28th out of the 39 countries taking part in GEM 2002. However, this is higher than for GEM Wales 2000, where the start-up rate was 1.4 per cent.

Whilst this fall is disappointing, it should be viewed in the light of a global downturn in business activity that has been repeated in other GEM nations (for example, the United States had a rate of 7.1 per cent in 2002, compared to 8.2 per cent in 2001). The countries with the highest rate of nascent entrepreneurship are Thailand (11.3 per cent), India (10.9 per cent), Chile (10.4 per cent) and Mexico (9.2 per cent). All of these have a start-up rate of nascent entrepreneurship that is statistically significantly above that in Wales.

### NEW FIRMS

Wales has a new firm prevalence rate of 2.0 per cent of the adult population engaged in running firms less than 42 months old in 2002, compared with 2.0 per cent in 2001 (and again higher than 2000). This ranks Wales 30th out of the 39 GEM nations. Poland has the lowest rate at just 0.8 per cent followed by France with 0.9 per cent. The countries with the highest rate of new firm activity are South Korea (9.3 per cent), Brazil (8.5 per cent), Thailand (8.4 per cent) and India (7.5 per cent).

Whilst 2.0 per cent is very low in comparison to many leading nations, it nevertheless places Wales firmly in the average for European nations and the GEM study is beginning to demonstrate that there does seem to be a difference between the 'European experience' – be that in cultural or policy orientated fields – and conditions prevailing elsewhere.

Once again in 2002, the start-up rate for Wales is higher than that for new firms. This pattern is expected and common to almost all of the GEM nations. In practice many ideas for new firms go through a 'gestation' phase where options are considered, finance investigated, markets researched etc., but then do not actually end up with the launch of a new firm.

## TOTAL ENTREPRENEURIAL ACTIVITY

The Total Entrepreneurial Activity (TEA) indices for 2002 are depicted in Figure 1. This shows the sum of the nascent and the new firms prevalence rates, less any double counted respondents who may appear in both categories.

We see that in 2002 Wales had a TEA score of 3.9 per cent, down from 6.0 per cent in 2001 although still considerably higher than the TEA score of 2.6 per cent reported in 2000. This represents a decline of around 35% in total entrepreneurial activity over the period 2001-2002, which is slightly higher than the 30% drop in entrepreneurial activity across the World but the same as the decline in total entrepreneurial activity across the G8 countries<sup>2</sup>. Nevertheless, it means that approximately 4 people in every 100 aged 18-64yrs in Wales were actively involved in starting or running a new firm in 2002 (or approximately 76,000 people).

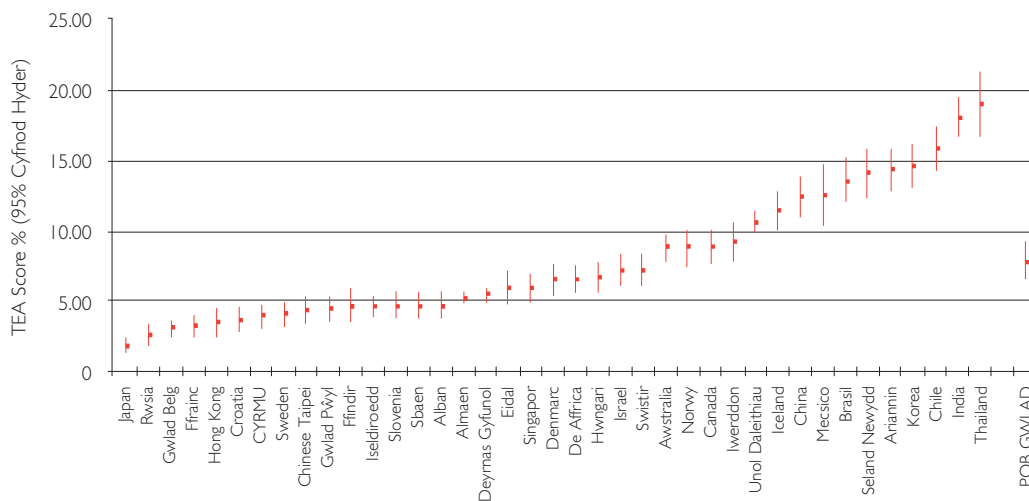
Across the Global GEM study, Wales ranks 33rd out of the total group of 39 GEM nations. Therefore, in 2002, Wales fell below Scotland (4.6 per cent) ranked 27th and the UK (5.4 per cent) ranked 23rd. These figures are statistical approximations and so vary within a 'confidence interval.' The lines drawn from each point in figure 1 represent the 95 per cent confidence interval and therefore actual ranking could vary quite substantially. Only when there is no intersection between the lines of the confidence intervals for two particular scores can we be sure that one nation definitely ranks above another. Interestingly this means that Wales could be ranked as low as 38th, but we know it is highly unlikely to be ranked above the UK in 23rd place. The most entrepreneurial nations in GEM 2002 were Thailand (18.9 per cent), India (17.9 per cent), Chile (15.7 per cent) and South Korea (14.5 per cent). The United States had a TEA score of 10.5 per cent, down from 11.7 per cent in 2001 – more than twice that of Wales. The lowest countries were Japan (1.8 per cent) and Russia (2.5 per cent).

<sup>2</sup> Harding, R. (2003) Global Entrepreneurship Monitor United Kingdom 2002, London Business School

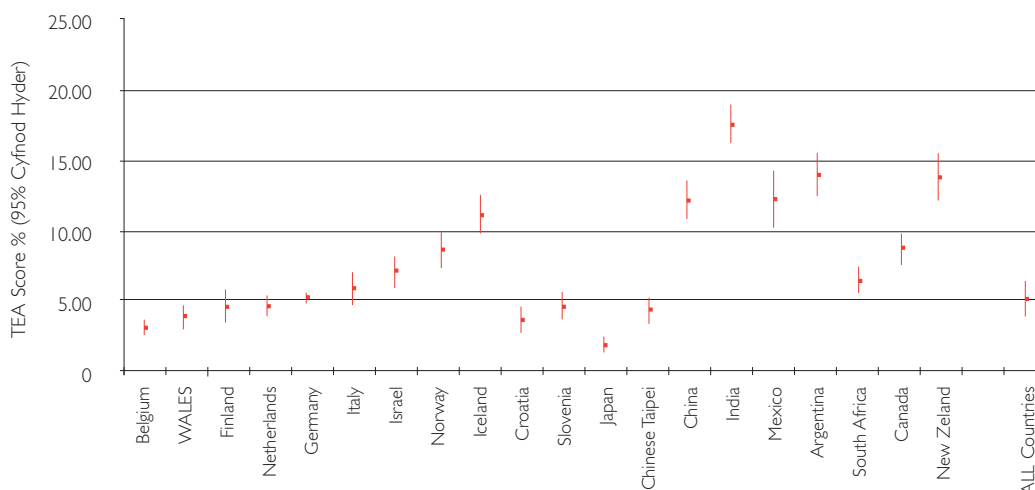
As discussed briefly above, it does appear that stages of development, as well as other cultural and demographic phenomena go some way towards explaining the differences that occur between nations. Figure 2 shows the TEA scores for the nations rearranged into the geographical regions mentioned above – Western Europe (plus Israel), Eastern Europe, Asia – Developed, Asia Developing, Latin America and other English Speaking. Wales is ranked towards the bottom of the Western European group, but not statistically significantly different from most in that group.

The average TEA score in Western Europe is about 6 per cent. The average scores for the other global regions are also interesting to examine. There are similar rates for Eastern Europe, whilst Asia-Developing is far higher on average than Asia-Developed. One explanation for this is the very traditional, and in some cases hierarchical employment structures in these developed nations. Starting new firms is not part of the everyday activity of life in these countries and strong social values means that this is unlikely to change quickly over time. In the other English speaking (former British Empire) countries there is still a striking difference between the 'developing' country of South Africa and the 'developed' countries of Australia and New Zealand.

**Figure 1** TEA 2002 - Total Entrepreneurial Activity Prevalence Rate by Country



**Figure 2** TEA 2002 - Total Entrepreneurial Activity Prevalence: Country by Region



<sup>1</sup> The GEM indices for 2000 and 2001 were adjusted to take account of the variable number of people across the countries that gave the reply 'don't know' to the main entrepreneurial activity questions. The co-ordinators adjusted the Welsh data using the following procedure: Determined the total number of 'Yes' answers, ensuring that these met the criteria of a nascent or new entrepreneur; Determined the total number of 'Don't know' answers; Applied the percentage of 'Yes' answers to the 'Don't know' answers; Calculated the proportional increase in nascent and new firm activity for Wales and thereby calculated an adjusted TEA rate and adjusted rates for Opportunity and Necessity entrepreneurship.



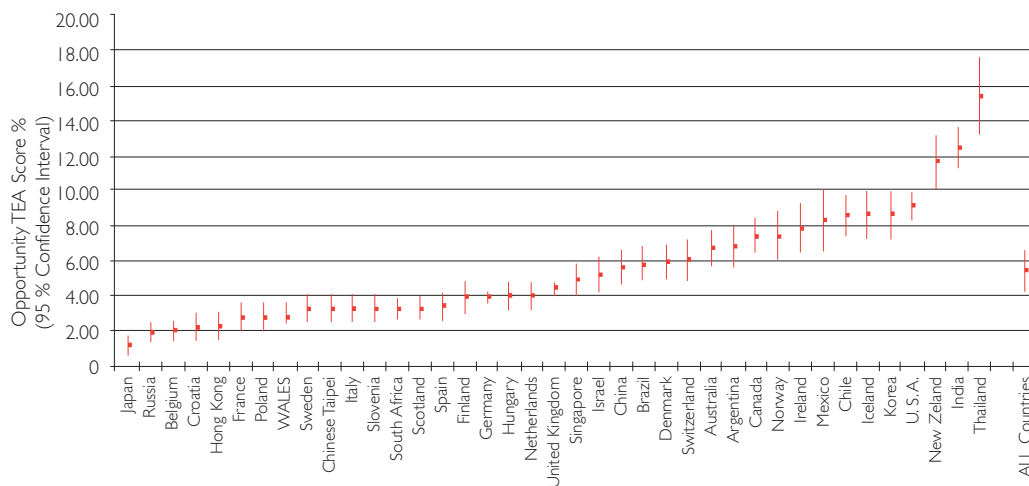
## OPPORTUNITY AND NECESSITY ENTREPRENEURSHIP

The distinction between those new business starts driven by a desire to exploit a business opportunity, and those where there was effectively no better choice, was first introduced into GEM last year. It proved so useful that it has now become an established part of the whole programme of research. Figure 3 shows prevalence rates of Opportunity based entrepreneurship for the 39 nations; Wales has a rate of 2.8 per cent – down from 4.4 per cent in 2001. This compares to 3.3 per cent in Scotland and 4.4 per cent in the UK. Almost every team experienced a fall in this measure in 2002, although the range of the measure is still great. For example, the highest rate of 15.3 per cent was in Thailand, with New Zealand at 11.6 per cent. The average rate was about 5.5 per cent across the whole 39 GEM nations, with the lowest being 1.2 per cent in Japan - this range of prevalence rates represents more than a ten-fold difference.

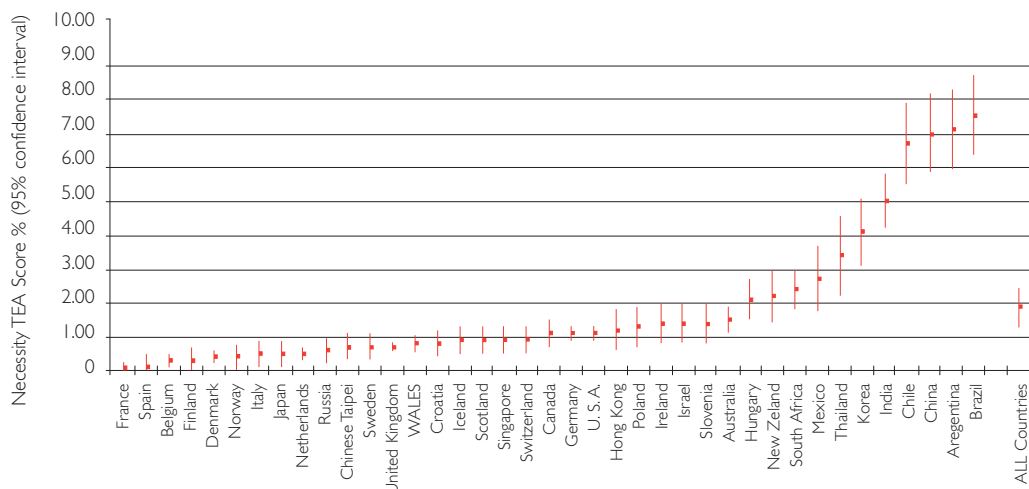
Approximately 61 per cent of new entrepreneurs in the global study claimed to be pursuing their start-up idea because they had spotted an opportunity in the market. These results rank Wales at 32nd out of the 39 nations. In Wales, 64 per cent of opportunity-based entrepreneurs were male with a TEA score of 4.1 per cent, 36 per cent were female with a TEA score of 1.8 per cent. 66 per cent of these people were aged between 25 and 44 years.

The distribution of necessity entrepreneurship – where people have no better choices for work - is shown in Figure 4. Here the range of prevalence rates is even broader with France and Spain having about 0.1 per cent of entrepreneurs indicating that necessity had motivated their choice, as compared to Brazil, Argentina, China and Chile with about 7 per cent.

**Figure 3** TEA 2002 Opportunity-Based Entrepreneurship by Country



**Figure 4** TEA 2002 Necessity-Based Entrepreneurship by Country





What is interesting is that many of the GEM countries have so few people actually participating in entrepreneurship out of necessity. At the higher value end of the table there are the developing countries, with the more developed countries congregating at much the same sort of low levels towards the left side of the chart.

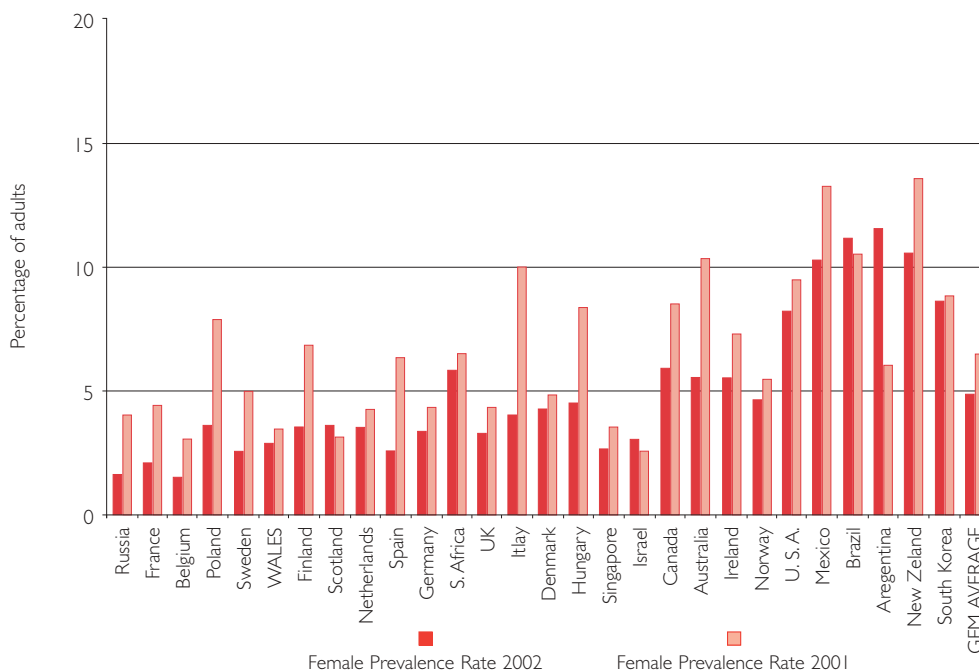
Wales has a necessity-based prevalence rate of 0.8 per cent, the same as in 2001. Scotland has a rate of 0.9 per cent, with the UK at 0.7 per cent. However, there is no statistical difference between these three rates. The average for the 39 nations is approximately 1.9 per cent, although this is skewed by the rates in the developing countries. In Wales, 40 per cent of necessity based entrepreneurs were male with a TEA score of 0.8 per cent, 60 per cent were female with a TEA score of 0.9 per cent. However, there was no statistical difference between these two measures and the sample size was small.

## ENTREPRENEURSHIP, AGE AND GENDER

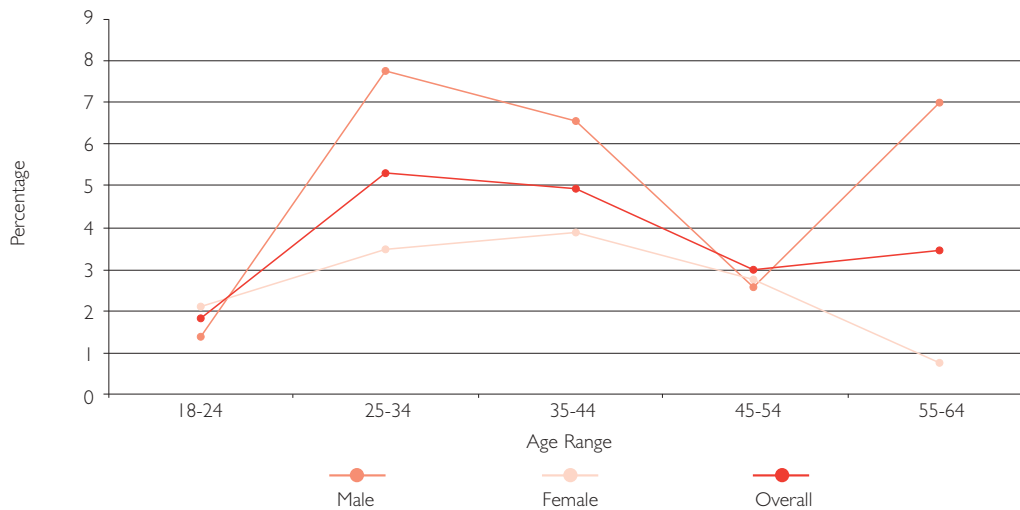
In GEM 2002, 57 per cent of Welsh entrepreneurs were male (with a TEA score of 5.3 per cent) whilst 43 per cent were female (with a TEA score of 3 per cent). There is no statistically significant difference between these two measures. This compares favourably in terms of female entrepreneurship to last year when 71.5 per cent were male and 28.5 per cent female – and this 'divide' was statistically significant. So taking these broad measures, roughly five out of every one hundred males in Wales are currently engaged in entrepreneurial activity, compared to three out of every hundred women. However, relative to 2001, there are less men in Wales engaged in entrepreneurial activity and since last year, the decline in total entrepreneurial activity in Wales can be largely attributed to the fall amongst male entrants into new venture creation – female activity has remained almost steady whilst male activity has declined by almost 40% during this period.

Despite the improvement in female participation, we remain reluctant to draw too many conclusions from such a fluctuating measure and await a longer time-series before definite policy implications can be drawn. Indeed, Figure 5 shows that this divide is present in many countries around the world and that the sorts of fluctuations we find in Wales are not untypical. However, for a snapshot of the current attitudes within Wales towards participation by women in the entrepreneurial process, at least compared to the UK and the average GEM nation, there is a new measure developed for the key informants which is described in more detail later in this report.

**Figure 5** Total Entrepreneurial Activity by Country by Women 2001-2002



**Figure 6** Total Entrepreneurial Activity by Age Range, Wales 2002

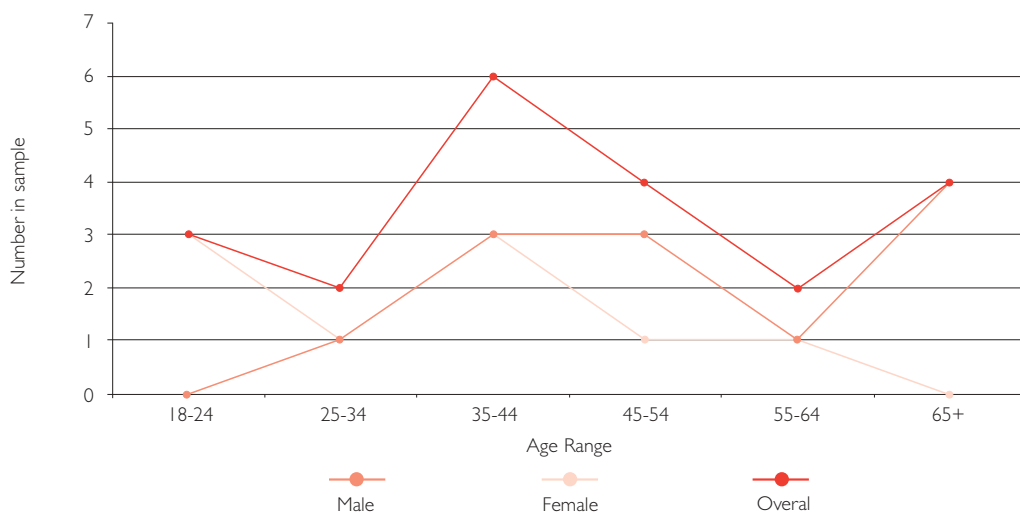


Examining the age profile for entrepreneurship is also interesting, given the development of policy proposals such as the WDA's Potentia programme, which target young and those over the age of 50. As Figure 6 shows, the peak of entrepreneurial activity in Wales in 2002 occurred in the 25-34 years age range, followed closely by the 35-44 years age range. This is consistent with most of the other GEM nations where we have data and the small sample size precludes us from drawing out to many conclusions. However, as in previous years, it would appear that policies aimed at encouraging entrepreneurship amongst the younger and older age ranges are addressing a definite need identified by this study in the economy.

## BUSINESS ANGEL INVESTMENT

The extent to which individuals provide funds for start-up firms on what is usually an informal basis is an important indicator of entrepreneurial activity (Figure 7). For GEM 2002, 20 individuals (or 1.2 per cent of the sample) identified themselves as having personally provided funds in any of the past three years for a new business start-up that was not their own (excluding buying shares in a publicly traded stock or mutual fund). This is a significant improvement on 2001, when only four individuals were identified in the Welsh survey.

**Figure 7** Business Angel Demographics in Wales 2002



With regard to the profile of the business angels identified in the adult population survey:

- eleven were male whilst nine were female
- four of the males were over 65 years of age, with the rest spread evenly across the age range
- ten of the investors worked full-time, four part-time and the remainder were retired
- nineteen were white with one of mixed race

Therefore, the growth in a greater 'equity environment' in Wales – one of the key recommendations of the GEM 2001 report - is to be welcomed. This could be explained partly by the investment climate where individuals may be moving away from putting funds into stocks and shares and may be looking for alternative investments. It could also be due to the increasing profile of entrepreneurship within Wales, although further research would need to be undertaken to determine this.

## WALES' ENTREPRENEURIAL SCORECARD

Table 1 provides a summary of the main indices for Entrepreneurial Activity for Wales and illustrates how the nation has performed against the other countries in the GEM study for 2002.

Table 1 – Wales' Entrepreneurial Activity Scorecard

Entrepreneurial Activity Indicators	Wales		All GEM Countries		
	Rank	Score	Median	High (Score)	Low (Score)
Start-ups overall	30th	3.1%	3.1%	9.3% (KO)	0.8% (PO)
Opportunity entrepreneurship	32nd	2.8%	4.9%	15.3% (TH)	1.2% (JP)
Necessity entrepreneurship	31st	0.8%	1.1%	7.5% (BR)	0.1% (FR)
Nascent entrepreneurship	28th	0.8%	3.1%	11.6% (TH)	0.8% (JP)
Total Entrepreneurial Activity	33rd	3.9%	6.5%	18.9% (TH)	1.8% (JP)
TEA – Male	35th	4.5%	10.7%	21.9% (CN)	3.0% (JP)
TEA – Female	33rd	2.4%	5.7%	18.5% (TH)	0.6% (JP)
Start-ups Female/Male Ratio	8th	68%	52%	130% (TH)	19% (IL)
New Firms Female/Male Ratio	24th	46%	55%	119% (CN)	16% (BE)
Participation of population as business angels in last 3 years	35th	1.2%	2.9%	7.5% (IC)	0.6% (PO)

Country codes:

BE – Belgium  
 BR – Brazil  
 CN – China  
 FR – France  
 IC – Iceland  
 IL – Israel  
 IN – India  
 JP – Japan  
 KO – South Korea  
 PO – Poland  
 TH – Thailand

## ENTREPRENEURIAL FRAMEWORK CONDITIONS IN WALES

The theoretical model developed by GEM identifies nine different dimensions that are considered to have an impact on a nation's entrepreneurial activity by directly influencing the conditions that lead to new venture start-ups and business growth (see appendix). The nine entrepreneurial framework conditions are:

- **Financial support** - the availability of financial resources, equity and debt for new and growing firms including grants and subsidies.
- **Government policies** - the extent to which government policies, reflected in taxes or regulations (or the application of either), are either size-neutral or encourage new and growing firms.
- **Government programmes** - the presence of direct programs to assist new and growing firms at all levels of government (national, regional, and local).
- **Education and training** - the extent to which training in creating or managing small, new, or growing business is incorporated within the educational and training systems at all levels.
- **Research and development transfer** - the extent to which national research and development will lead to new commercial opportunities and whether or not these are available for new, small, and growing firms.
- **Commercial and professional infrastructure** - the presence of commercial, accounting, and other legal services and institutions that allow or promote the emergence of new, small, or growing businesses.
- **Barriers to entry** - the extent to which commercial arrangements are prevented from undergoing constant change and re-deployment, preventing new and growing firms from competing and replacing existing suppliers, subcontractors, and consultants.
- **Access To Physical Infrastructure** - the ease of access to available physical resources (communication, utilities, transportation, land or space) at a price that does not discriminate against new, small, or growing firms.
- **Cultural and Social Norms** - the extent to which existing social and cultural norms encourage, or do not discourage, individual actions that may lead to new ways of conducting business or economic activities and, in turn, lead to greater dispersion in wealth and income.

The influence of each of the entrepreneurial framework conditions is examined by means of in-depth interviews with selected experts, who were chosen, as in last year's study, on the basis of his or her knowledge of a specific framework and who could articulate the issues for the entrepreneurial sector within that entrepreneurial framework condition. At least two experts were interviewed per entrepreneurial framework condition who were directly involved in delivering a major aspect of that framework condition but who were known to possess a wider than normal 'vision' of the entrepreneurial phenomenon. The third expert to be interviewed in an entrepreneurial framework was an observer; i.e. someone who is not directly engaged in delivering an entrepreneurial framework condition, but who has a deep knowledge and broad overview. Such experts were normally either academics or consultants. Where a fourth key informant was chosen for a particular entrepreneurial framework condition, that person should be a deliverer rather than an observer. It was also ensured that at least 25 per cent of the key informants are or were entrepreneurs (with ethnic, minority and gender balance also considered when choosing experts).

In Wales, a total of 36 'key informants' were interviewed made up of representatives from the private, public and voluntary sectors and the GEM Wales research team would like to thank the senior businesspeople, politicians, educationalists, policy-makers, financiers and entrepreneurs who gave up their valuable time to act as key informants for this study.

This section will discuss each of the framework conditions affecting new and growing firms in Wales, drawing on the findings from the interviews with the key informants. This year's analysis will concentrate specifically on the longitudinal data that has been gathered during the last three years of GEM Wales, as well as comparing the data with the UK and the average for the GEM nations. It is clear that the general air of depression that has affected the populations survey also comes through within the expert interviews in 2002, so perhaps it is more relevant if we examine the trends over the period 2000-2002 to see how Wales has performed.

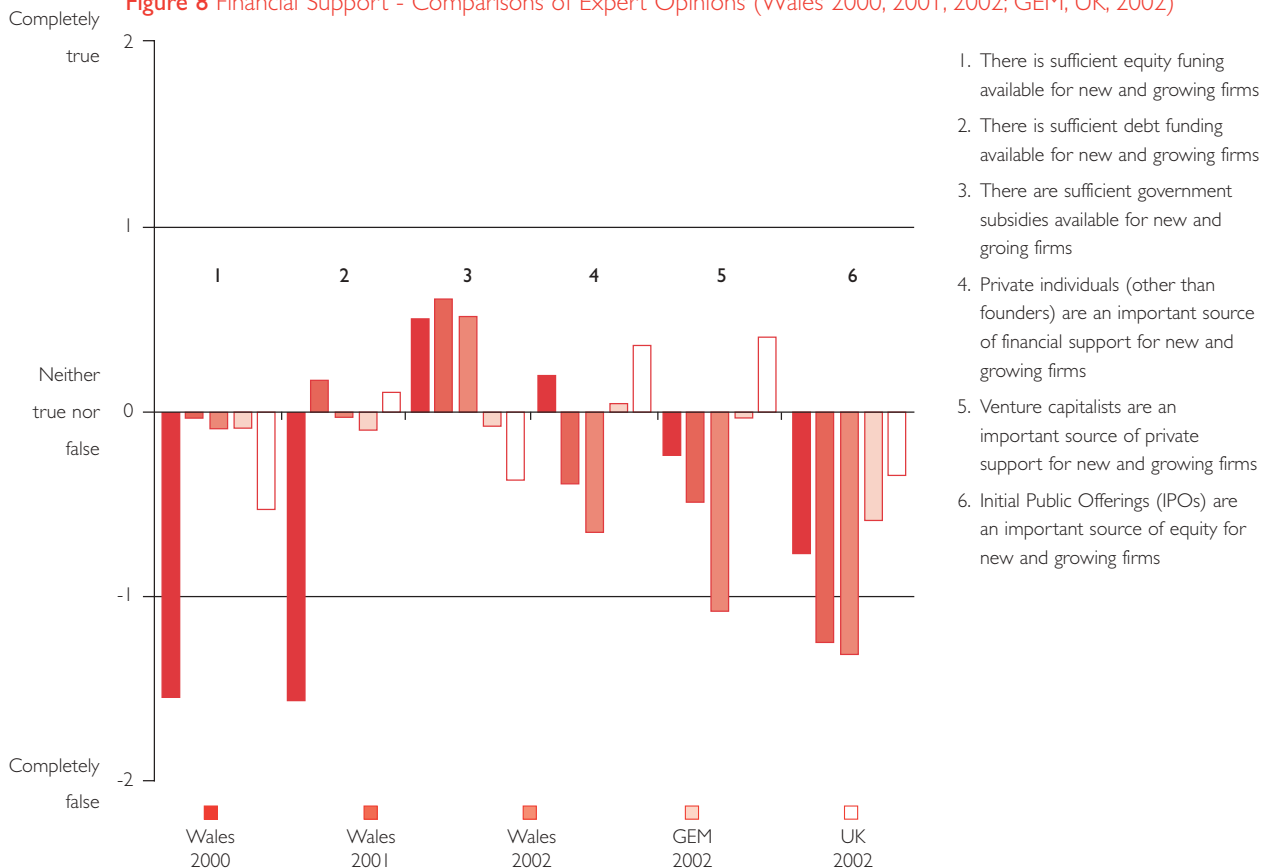
## FRAMEWORK CONDITION NO 1

### FINANCIAL SUPPORT

#### Loan, equity and public sector support

- According to the latest Bank of England report on finance within small business<sup>3</sup>, bank lending to SMEs rose in 2002. It is estimated that bank lending to small firms in 2002 to £40.6 billion – the highest level since the early 1990s – driven mainly by low interest rates. The report also indicates that there is little evidence of firms having difficulties in accessing bank finance such as loans or overdrafts. This finding is supported by studies such as the CBI SME trends survey<sup>4</sup> and the NatWest Small Business Research Trust<sup>5</sup> quarterly survey, indicated that access to finance was not something that currently concerned the majority of small firms.
- This year, the interviews with the key informants suggest that the availability of finance is also perceived not to be a significant problem within Wales. As Figure 8 suggests, the issue of insufficient finance for small firms has reduced in importance since the first GEM study in 2000 and is now at the average for the other GEM nations within the global study.

**Figure 8 Financial Support - Comparisons of Expert Opinions (Wales 2000, 2001, 2002; GEM, UK, 2002)**



- Perhaps of interest is the fact that the availability of both loan and equity finance is less of an issue in Wales than the rest of the UK. This could be explained by the development and profile of Finance Wales, which is becoming increasingly perceived by the small firm community as a valuable source of loan and equity finance, particularly for 'riskier' ventures which require some public sector support to attract other investors.

<sup>3</sup> Bank of England (2003) Finance for Small Firms – tenth report

<sup>4</sup> CBI (2002) SME Trends survey

<sup>5</sup> Small Business Research Trust (2002) Quarterly Survey of small business in Britain, December

- For example, the latest figures for the Welsh 'development bank' indicate that 175 businesses received a total investment of over £8 million from Finance Wales in the last financial year, leveraging in another £24 million from other financial institutions<sup>6</sup>. This created nearly 1700 jobs and doubled the number of new university spinouts in the economy. It will be interesting to see, over the next couple of years, how Finance Wales' role as a significant provider of funding outside of the high street banks will develop.
- After bank lending, government subsidies are an important source of funding for small firms, especially at the start-up phase. Within Wales, there has been an acceptance, during the last three years of the GEM project, that there is more than sufficient government support for the small firm sector.
- Perhaps the most significant development during the last twelve months has been the establishment of the Assembly Investment Grant, which was introduced in April 2002<sup>7</sup>. This scheme offers financial support throughout Wales for SMEs, providing grants of between £5001 and £50000.
- In the period 1st April to 31st December 2002, 245 offers of AIG were made with a total value of nearly £8 million, creating 405 jobs and maintaining another 1307. An interesting point to make is that, within Wales, the perception of the availability of government subsidy is consistently above that for the UK, demonstrating perhaps that the Welsh Assembly is now clearly perceived as an adequate supporter of grants for the small firm sector.

#### Business angels, venture capital and IPOs

- Whilst Wales is providing sufficient funding to small firms, the picture is very different in terms of business angels, venture capital and IPOs, which are well below the GEM average and UK scores. Indeed, the picture has worsened during the last three years and there is increasing concern that the provision of private equity, whilst representing only a very small share of the total external finance sought by SMEs, is not adequately available within Wales, particularly to high growth firms.
- Wales has certainly not been a hotbed of equity and venture capital deals in recent years. There are only four private sector venture capitalists of any significance size with a geographical base in Wales – Wales Fund Managers, Wesley Clover, UK Steel Enterprise and Hafren ventures – although organisations such as £1 still have an interest in Welsh deals. Indeed, it could be argued that without the presence of Finance Wales as a major source of equity funding for smaller deals up to £750k, there would be very little going on in terms of any type of venture capital activity in Wales.
- In terms of official data for business angel and venture capital activity, this was not available from the BVCA at the time of this report. However, evidence from various commentators suggest that business angel activity in Wales is very much reduced from previous years, and this opinion is reflected within this study.
- IPOs (Initial Public Offerings) provide a critical source of funding to aid the expansion of businesses and tend to reflect the entrepreneurial maturity of regions as they move from start-ups to the development of 'supergrowth' companies that generate wealth and employment.
- As in previous years, there has been little activity within Wales in terms of IPOs, with only Zi Medical and the 2 Travel Group entering AIM (Alternative Investment Market) in 2002. According to the London Stock Exchange<sup>8</sup>, there are currently 23 companies traded on the main market or AIM in Wales, as compared to 182 in Scotland. This represents less than 1% of the total number of UK firms trading on the stock exchange. This suggests that there continues to be little appetite for larger equity deals within Wales, a finding supported by our study.

<sup>6</sup> Finance Wales (2003) Annual report

<sup>7</sup> National Assembly for Wales (2003) RSA and AIG statistics for 2002-2003, Report to Economic Development Committee, March 6th 2003.

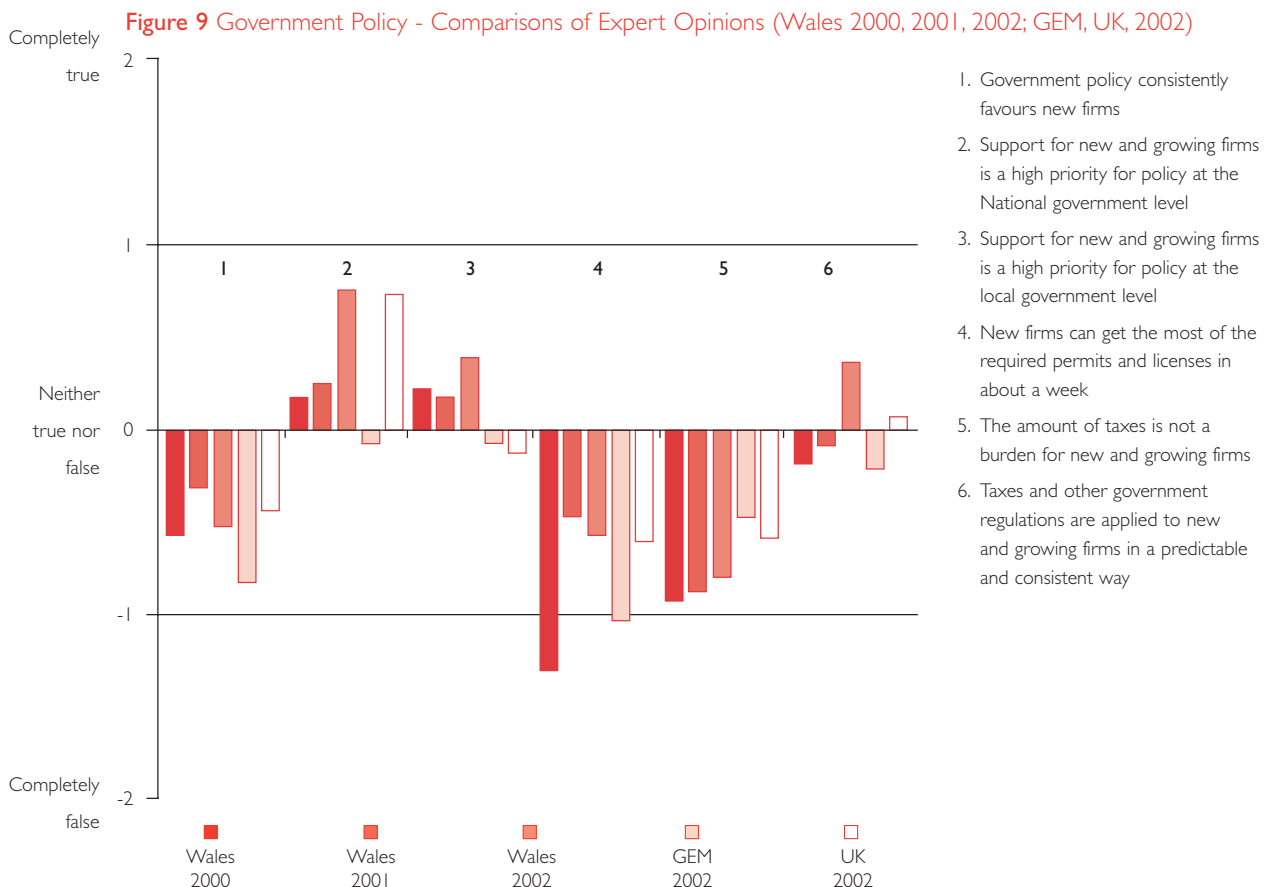
<sup>8</sup> London Stock Exchange (2003) LandMark Wales

- Therefore, in the context of these findings, the suggestion that the Welsh Assembly Government are to create a 'knowledge bank' for high technology (and high risk) start-ups is interesting. Originally to be operationalised by the DTI (but ultimately rejected), the aim is to help innovative knowledge-based start-ups - usually with no assets behind them - to secure bank finance at a time when they are relatively unattractive to venture capitalists<sup>9</sup>.
- With both the Bank of England<sup>10</sup> and the British Venture Capital Association<sup>11</sup> suggesting that venture capital funds have tended to concentrate on supporting existing investees and have avoided any start-up investment, the creation of such a bank may be at the right time. However, whether it is in the right place - Wales - is still open to question as the volume of deals for such risky start-ups have hardly been high, even within institutions such as Finance Wales.

## FRAMEWORK CONDITION NO 2

### GOVERNMENT POLICY

- Perhaps one of the great challenges of the GEM project is that the results are increasingly being scrutinised by politicians and policy-makers of all the nations taking part in the project to evaluate the impact of specific policies on entrepreneurial development. The second and third framework conditions - dealing with government policies and programmes - are therefore of specific interest in evaluating how the public sector is perceived in providing support for the public sector.
- During the period 2000-2002, key respondents have agreed that government policy in Wales does not consistently favour new firms, although this is higher than the pessimistic outlook of many of the other GEM nations (Figure 9). However, it is generally agreed that support for new and growing firms is a high priority for policy within the National Assembly, and that this has increased considerably since the first GEM report in 2000 and is considerably higher than the average for GEM in 2002.



<sup>9</sup> Department for Trade and Industry (1999) DTI plans knowledge bank to support financing of knowledge-based business, press release, 10th November

<sup>10</sup> Bank of England (2003) Finance for Small Firms - tenth report

<sup>11</sup> BVCA (2003) BVCA report on investment activity 2002 - executive summary



- This should not be surprising, given the statements from various Ministers that 'small firms are the backbone of the Welsh economy'. To be fair, many of the recent economic development initiatives emanating from the government, from improving public sector procurement policies to the Innovation Action Plan, are geared specifically towards improving the SME sector. As mentioned in the examination of financial support, the emphasis on the development of policies such as the Assembly Investment Grant suggest that small firms are increasingly becoming important 'customers' for government policy within Wales.
- A similar picture emerges at a local level where, since 2000, there is an increasingly optimistic viewpoint of the role of councils in developing the entrepreneurial capacity of their localities. This should not be too surprising, given the increasing role of economic development departments within local authorities, especially in distributing small grants of up to £5000. In addition, many of the fifteen councils within the Objective 1 region of Wales have taken advantage of the funding available to establish a new series of grants to help develop the potential of local firms.
- Taxation remains a key issue for most small firms, as various recent studies have demonstrated. For example, the recent British Chambers of Commerce study on productivity<sup>12</sup> suggested that two thirds indicated that a leading priority was a reduction in the tax and regulatory burden on business. Within the GEM report, a similar viewpoint has been consistently held since 2000, although more key respondents in Wales are less pessimistic about the ability of firms to get the required permits etc. to establish a new business this year.
- Of surprise is the fact that our experts are beginning to believe that taxes and government regulations are applied to business in a predictable and consistent way, although the study cannot tell if this means that small firms now expect to get hit hard in terms of taxes and regulations. It will be interesting to note the results in the next GEM report which will be taking place after the recent rise in National Insurance contributions.

## FRAMEWORK CONDITION NO 3

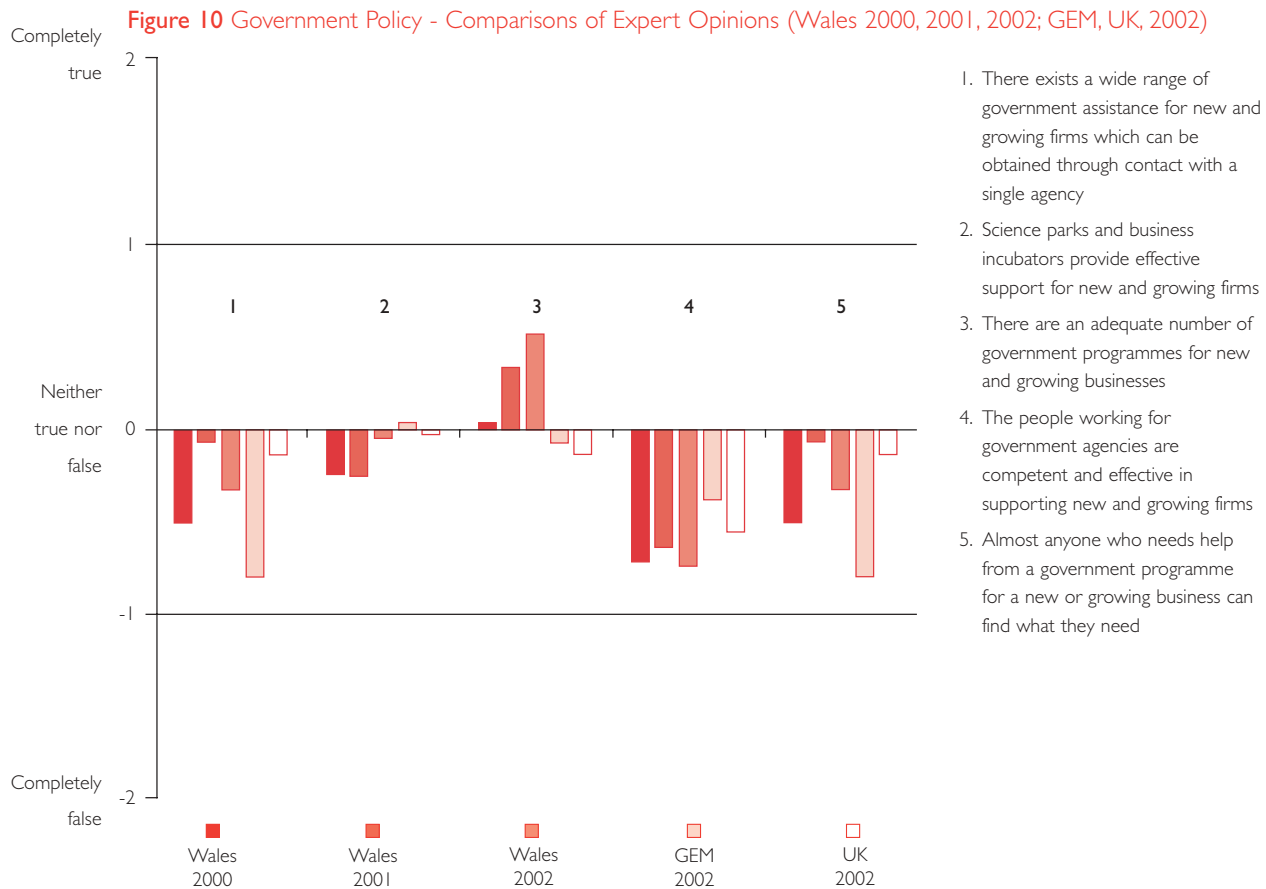
### GOVERNMENT PROGRAMMES

- Since the review of business support in Wales was undertaken in 2001 by Dr Jim Driscoll for the National Assembly, one of the major concerns of various groups has been the confusion and duplication facing many small firms when it comes to accessing support. Given the amount of funding allocated towards business support – the WDA is allocating £21 million in 2002-2003 towards general business support and a further £68 million towards specific areas such as innovation, supply chain development<sup>13</sup> – the onus on ensuring that such funds actually make a difference to the performance of business becomes a critical issue.
- The Welsh Development Agency is currently undertaking a detailed analysis of business support and reorganisation its delivery with a new launch of this programme in Autumn 2003. The aim of this new 'national gateway' will be to provide 'access to impartial advice, information, initial diagnosis, signposting and referral accessed through call centre, website and local access points'.<sup>14</sup>
- This is long overdue, as figure 10 indicates. The demise of Business Connect last year has certainly led to an increased perception that government assistance for new and growing firms in Wales is not being met through a single agency, although this is less than for the average GEM nation. However, it is higher than for the UK, where the Small Business Service is beginning to reap rewards in its attempts to bring all of its support under one umbrella, despite initial teething problems.

<sup>12</sup> British Chambers of Commerce (2003) BCC Productivity Survey, March 2003

<sup>13</sup> Welsh Development Agency (2002) WDA Operational Plan 2002-2003

<sup>14</sup> Welsh Development Agency (2002) Business Support Review – Progress Report to Economic Development Committee, October 2002



- Perhaps the biggest challenge for the Welsh National Assembly and its delivery bodies such as the Welsh Development Agency is the streamlining and focusing of its existing business provision towards the small business sector. The double edged sword of a reactive approach is that whilst government is congratulated on concentrating its efforts on developing SMEs, it can often be accused of 'initiativitus' and that there is essentially 'too much of a good thing' in terms of the number of business support programmes available.
- This viewpoint is certainly reflected in this study, which shows a growing number of key experts who believe that there are an adequate number of government programmes for new and growing small firms in Wales, considerably higher than the GEM average or for the UK. In addition, there continues to be dissatisfaction with the effectiveness and competence of those individuals at the front line of supporting new and growing firms, which is again higher than the average GEM nation. This seems to be becoming a serious issue for the effective delivery of programmes within Wales and perhaps there needs to be a greater effort on ensuring that all public agencies (as well as private contractors) working with the small firm sector are accredited via organisations such as the Institute of Business Advisers<sup>15</sup>.
- There is still an ambivalent view in Wales towards whether science parks and incubators provide effective support for new and growing firms, although this has improved slightly since the first GEM study in 2000. Next year's results will be interesting following the considerable publicity for the development of the Technium concept across Wales, financed largely through Objective 1 funds. Whilst a recent evaluation of the first Swansea Technium seems encouraging<sup>16</sup>, the well-publicised problems over the Media Technium at Gelli Aur in Carmarthenshire may not encourage positive perceptions of this innovative project.

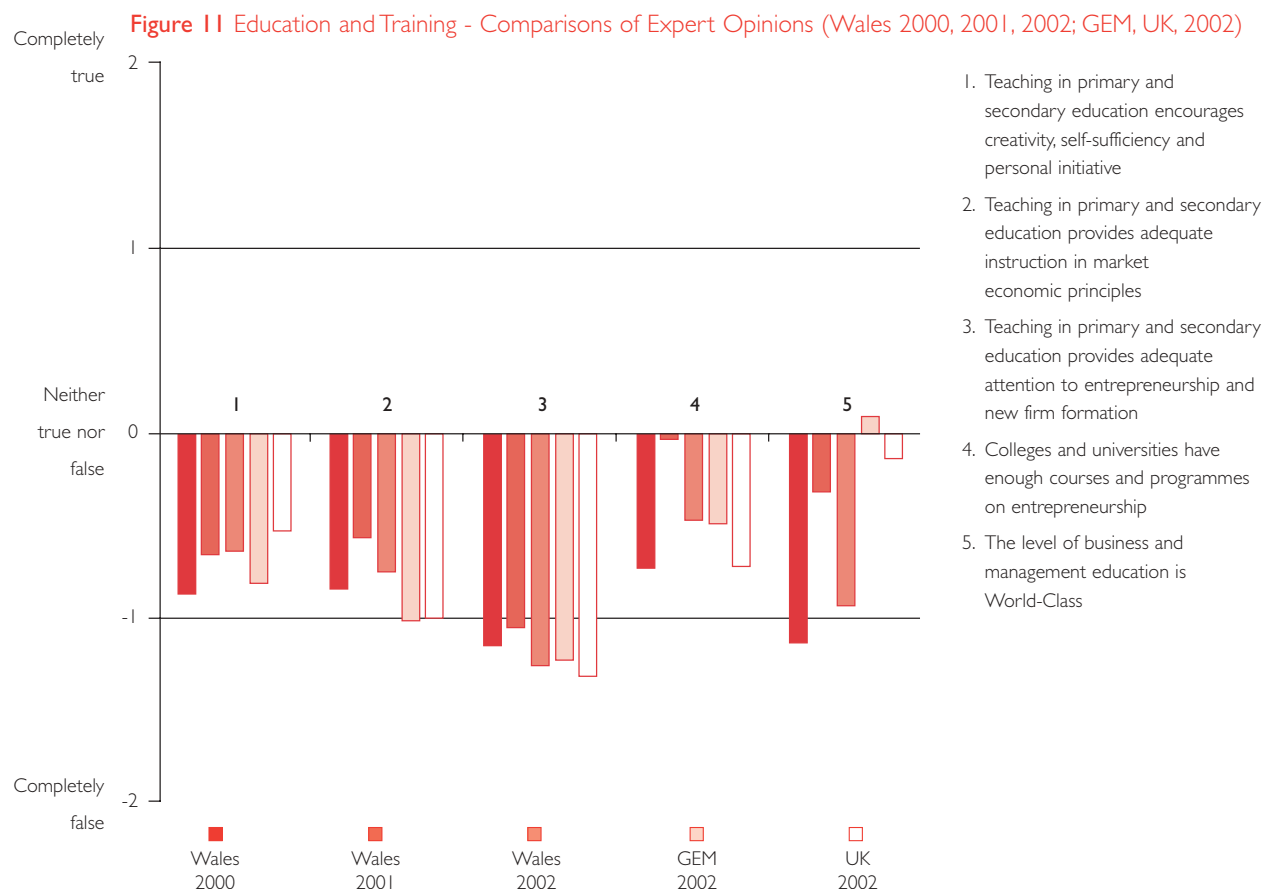
<sup>15</sup> Institute of Business Advisors (2002) Annual report 2001/2002

<sup>16</sup> Welsh Development Agency (2003) Technium results 'exceed expectations' 25th March 2003.

## FRAMEWORK CONDITION NO 4

### EDUCATION AND TRAINING

- The development of an entrepreneurial culture via the relevant education and training programmes in one of the key principles behind the Entrepreneurship Action Plan for Wales. The encouragement of a new generation of entrepreneurs through our school, college and university system may be one of the key factors in developing a more enterprising future for the development of the Welsh economy.
- According to the recent review of the EAP for the Economic Development Committee of the National Assembly for Wales<sup>17</sup>, a number of actions have been undertaken to progress entrepreneurship education including:
  - The establishment of a National Working Party for Entrepreneurial Career Development
  - Development of classroom based materials for integration into the National Curriculum
  - Launch of Enterprise Insight Cymru, including the creation of the Youth and Enterprise Strategy for Wales
  - Young Enterprise Graduate Programme
  - Knowledge Exploitation Fund scholarships
- Despite this, Figure 11 suggests that the overall perception of enterprise education and training in Wales is weak, although this is also reflected in the results of other GEM nations. Given that large amounts of funding have been spent in this area since 2002, the fact that there has been little (if any) improvement in the perceptions of the quality and relevance of enterprise education at all levels – primary, secondary and tertiary – suggest that much work remains to be done to convince sceptics that increased funding and programmes are making a difference.



<sup>17</sup> Welsh Development Agency (2002) Entrepreneurship Action Plan: Implementation Update, November 2002

## FRAMEWORK CONDITION NO 5

### RESEARCH AND DEVELOPMENT TRANSFER

- In today's knowledge-based economy, the development of R&D, and its efficient transfer into the market-place is essential for the long term growth of any entrepreneurial economy. For example, research for the Global Competitiveness Index showed that for medium income countries [such as Wales], developing the capacity to improve technology, and company spending on R&D, become important factors for growth.
- However, as the GEM framework appreciates, it is also crucial for this research to be commercialised and there needs to be strong interactions between the various channels and sources of technology. Most importantly, whilst Government should ensure proper funding of R&D performed in the higher education sector, there have to be strong links with industry as business research develops technologies that, in many cases, have been first explored by public research. It is therefore important that government ensure dense relationships between public and private research, so that knowledge flows more easily between the two sectors.
- Currently, Wales has a relatively weak R&D system as compared to other regions of the UK. According to the most recent Government figures on private sector R&D expenditure, private sector businesses in Wales spent £136 million on R&D, representing a decrease of 33 per cent since 1999, as compared to a total rise of 11 per cent in the UK. Wales now accounts for only 1.1 per cent of total business R&D undertaken within the UK as compared to 1.8 per cent in 1999. This reflects a long-term trend in the low level of private sector R&D carried out in Wales relative to the rest of the UK. Only North East businesses spent less on R&D in 2000 and, for the first time, R&D spending by private businesses in Northern Ireland overtook Wales, as predicted in the GEM Wales 2001 report.
- Within the peripheral regions of Europe such as Wales, universities are seen as the key to the development of technological innovation, especially given the low level of R&D historically undertaken within the private sector. In order to fully utilise the potential of technology transfer as an economic force for development, it is vital that research – both basic and applied – is adequately resourced. However, recent evidence suggests that Wales needs considerably greater resources for academic R&D not only to catch up with the funding of research in other parts of the UK, but to close the quality gap in areas – such as biological sciences, chemistry and mechanical, aeronautical and manufacturing engineering - which form the foundation for important high technology industries such as aerospace, optoelectronics, biotechnology and pharmaceuticals, sectors in which the majority of R&D is undertaken within the UK.
- As in the two previous GEM studies, Figure 12 indicates there is general agreement that R&D is not being effectively transferred from the academic to the commercial sector and that new and growing firms have only limited access to research and technology (although this is equally as true in Wales as it is in the UK and the majority of other GEM nations). Given the considerable efforts of the Welsh Development Agency and the Assembly Government during this period to develop innovation as a key part of economic development strategies, this continued pessimism is surprising. Despite considerable resources being put into programmes such as the Regional Technology Plan, Centres of Excellence and Know-How Wales, it is still the case that many believe that there are the links between academia and industry are inadequate.
- Certainly, the launch of the Innovation Action Plan<sup>18</sup>, which pictures Wales as a 'small clever country' may well address this gap between universities and the business world, although responses by both industry and academia to the Lambert Review on how long term links between business and UK universities can be strengthened suggest that many barriers are still to be overcome before academics and businesspeople work closely for the benefit of the economy<sup>19</sup>.

<sup>18</sup> Welsh Assembly Government (2003) Wales for Innovation – the Welsh Assembly Government's Action Plan for Innovation

<sup>19</sup> Times Higher Educational Supplement (2003) Brown's man sidesteps industry row, June 13th, p.1

**Figure 12** Research and Development transfer - Comparisons of Expert Opinions  
(Wales 2000, 2001, 2002; GEM, UK, 2002)



## FRAMEWORK CONDITION NO 6

### COMMERCIAL AND PROFESSIONAL INFRASTRUCTURE

- As in the last two GEM studies, it is generally recognised that Wales has a very good professional and commercial infrastructure for the development of the small firm sector, well above the GEM average across all measures (Figure 13) and certainly superior to the perception of such services in the UK. However, as in previous years, the main concern of respondents relates not to the supply of commercial and professional support but to its cost, which may reflect the lack of competition within the region.

**Figure 13** Commercial and legal infrastructure - Comparisons of Expert Opinions (Wales 2000, 2001, 2002; GEM, UK, 2002)



- Given the amount of funding that is going into public sector support and the ambivalence of the key respondents towards the sector, it is worth noting the continued positive responses towards the ease of access to key commercial and legal organisations in Wales. Perhaps this remains one of the major challenges for the business support sector in Wales - how to bring the public and private sector closer together to provide a coherent set of programmes to enable our SME sector to become more efficient, effective and competitive in the market place.

## FRAMEWORK CONDITION NO 7

### BARRIERS TO ENTRY

- The barriers to entry framework condition (or the degree of internal market openness) deals with the dynamism of industry within a region, as new businesses come in to replace existing firms (figure 14). As in previous years, Wales is perceived (relative to other GEM nations) to be a relatively undynamic place for either business-to-consumer or business-to-business markets, although there is also a similar opinion by key respondents within the UK.

**Figure 14** Barriers to entry (internal market openness) - Comparisons of Expert Opinions  
(Wales 2000, 2001, 2002; GEM, UK, 2002)



- Perhaps worryingly for the development of a more entrepreneurial economy in Wales is the perception that new firms continue to find it difficult to afford the cost of market entry, despite the increase in the amount of support available to SMEs in Wales during the last three years. It may be pertinent to undertake further research in this area to determine exactly the types of market barriers encountered by Welsh entrepreneurs in establishing their businesses, and whether this differs to other regions. On a more positive note, there has been a considerable change of opinion about the role of established firms in 'blocking' new entrants into the market place, which may reflect the declining influence of many larger businesses in Wales and the transfer to a more dynamic entrepreneurially-led economy.

<sup>20</sup> Welsh Assembly Government (2003) Welsh Assembly Government's Broadband Wales Programme – paper presented to the Economic Development Committee, 30th January 2003

<sup>21</sup> The Wales SME-Business is a programme of tailored support to enable SMEs in the Objective One area of Wales to gain subsidised support from high-level consultancy services in Information and Communication Technologies (ICT)

## FRAMEWORK CONDITION NO 8

## ACCESS TO PHYSICAL INFRASTRUCTURE

- As Figure 15 indicates, the physical infrastructure in Wales is perceived (at least by key informants) not to be as supportive of new and growing businesses as the rest of the GEM nations, although there is no negative perception within any of the measures. Indeed, the support of, and costs and access to, utilities (gas, water; electricity, sewage) remains similar to last year.

**Figure 15** Access to physical infrastructure - Comparisons of Expert Opinions (Wales 2000, 2001, 2002; GEM, UK, 2002)



- The interesting finding, relative to the UK, is the perception of the cost and access of good telecommunications. This lies at the heart of the Welsh Assembly Government's economic development strategy, especially with respect to the roll out of broadband communications<sup>20</sup>. Whilst good access to communications is not perceived to be much different to that of the UK, the cost of such telecommunications is definitely seen to be a problem (and that gap is wider still with the average GEM nation). Given the emphasise on projects such as Opportunity Wales and Wales SME Business<sup>21</sup> on consultancy to deliver solutions to Welsh SMEs in IT and e-commerce problems, perhaps the fundamental issue of the cost of IT is something that also needs to be addressed in the context of the small firm sector in Wales.

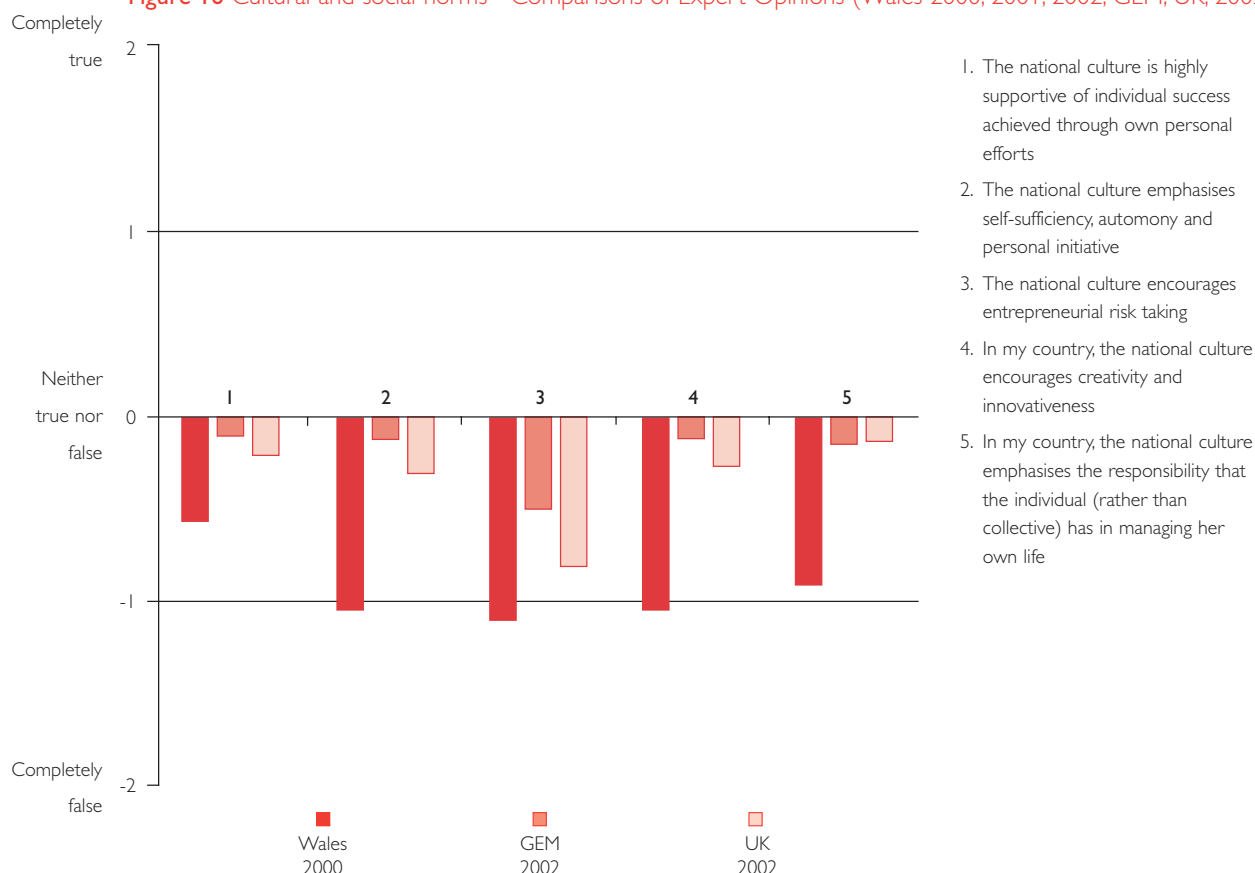


## FRAMEWORK CONDITION NO 9

### CULTURE AND SOCIAL NORMS

- Unfortunately for the measure of cultural and social norms, the GEM Global team has changed the questions asked, and therefore there can be no direct comparison with previous years' results for Wales. However, it is clear from Figure 16 that Wales remains, at least in 2002, well behind the rest of the GEM nations in terms of key national cultural issues in entrepreneurship. This reflects the findings of last year, where Wales was seen as the having the worst rating for national entrepreneurial culture of all the GEM nations.

**Figure 16** Cultural and social norms - Comparisons of Expert Opinions (Wales 2000, 2001, 2002; GEM, UK, 2002)

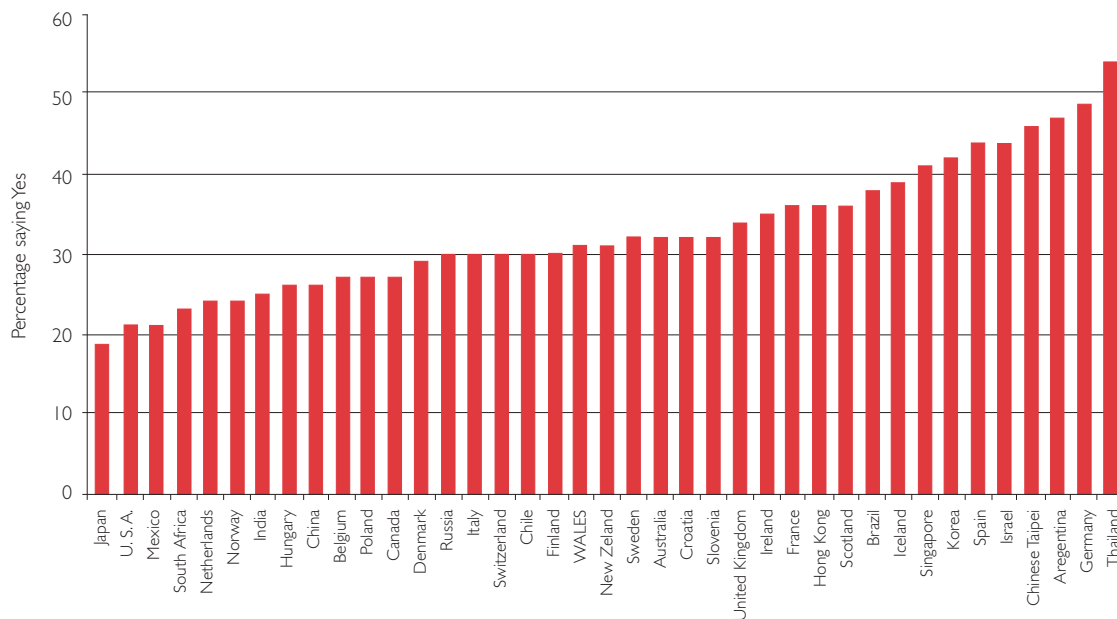


- Most worrying is the gap with the UK in terms of measures of cultural and social norms towards entrepreneurship (apart from the encouragement of risk-taking). Despite the millions being spent on developing the Entrepreneurship Action Plan and the specific actions towards developing a long term entrepreneurial culture, there is still a strong perception that Wales is not supportive of entrepreneurial success, does not encourage creativity and innovation, and does not emphasise autonomy and personal initiative. There could be many historical reasons for this, as we have discussed in prior GEM studies, and that changing the entrepreneurial nature of Wales is very much a long term process that may take a generation or more.
- However, it is clear that the campaign to develop a greater entrepreneurial culture is not getting through to the key informants who are experts within their fields in Wales and the individuals to whom such messages should be received loud and clear. As a result, some of the aspects of the Entrepreneurship Action Plan committed to culture may continue to need ongoing funding and resources to ensure that such a mind set is changed and that the message of Wales becoming a more entrepreneurial nation is repeated time and time again.

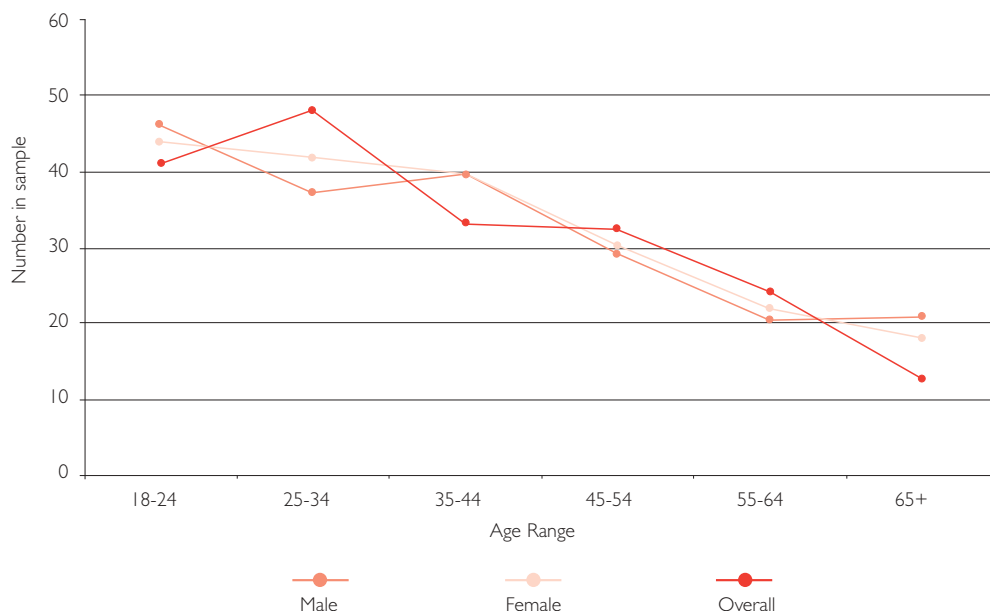
<sup>15</sup> National Assembly for Wales (2001) A Winning Wales - the National Economic Development Strategy of the Welsh Assembly Government, National Assembly for Wales, Cardiff

- A valuable section of the adult population survey asks people questions about their attitudes towards entrepreneurship and factors that may influence their decision to start a new firm. A key question is that involving the fear of failure – with anecdotal evidence suggesting that the stigma attached to business failure in the UK is significant.
- In Wales, fear of failure is often quoted as one of the main reasons why people don't risk starting a new business. In GEM 2002, 30.9 per cent of respondents to the adult survey said that fear of failure would prevent them, compared to 28 per cent in 2001.
- Figure 17 below shows that Wales is ranked 20th of the 39 nations – the highest nations being Thailand with 54 per cent. This puts Wales firmly in the 'average' of views on the subject and whilst some of the answer must be bound up in cultural explanations, there appears to be little out of the ordinary in Wales. Figure 18 shows the age and gender profile of those people in Wales who said that fear of failure would prevent them from starting a business. There is clearly a similar pattern or path for both genders and a gradual decline as people get older. As one accumulates wealth and experience, the perceived and personal risks involved with starting a new firm may decline, as does the stigma attached to failure.

**Figure 17** "Fear of failure would prevent me from starting a business"



**Figure 18** Percentage of people who say that fear of failure would prevent them from starting a business



## ENTREPRENEURIAL OPPORTUNITY AND CAPACITY

- The entrepreneurial framework conditions are important in establishing whether nation has developed an environment sufficient for the creation and growth of new firms. However, there is no point in having all the entrepreneurial framework conditions in place within a nation unless there are sufficient numbers of individuals who can identify good business opportunities and, perhaps most importantly, have the skills and motivation to take full advantage of those opportunities to create new firms in the economy.
- This next section will use the judgements of the key informants, along with data from the adult population survey, to identify the degree of entrepreneurial opportunity and capacity that exists within Wales, and whether this has changed during the last three years of GEM.

### Entrepreneurial opportunity

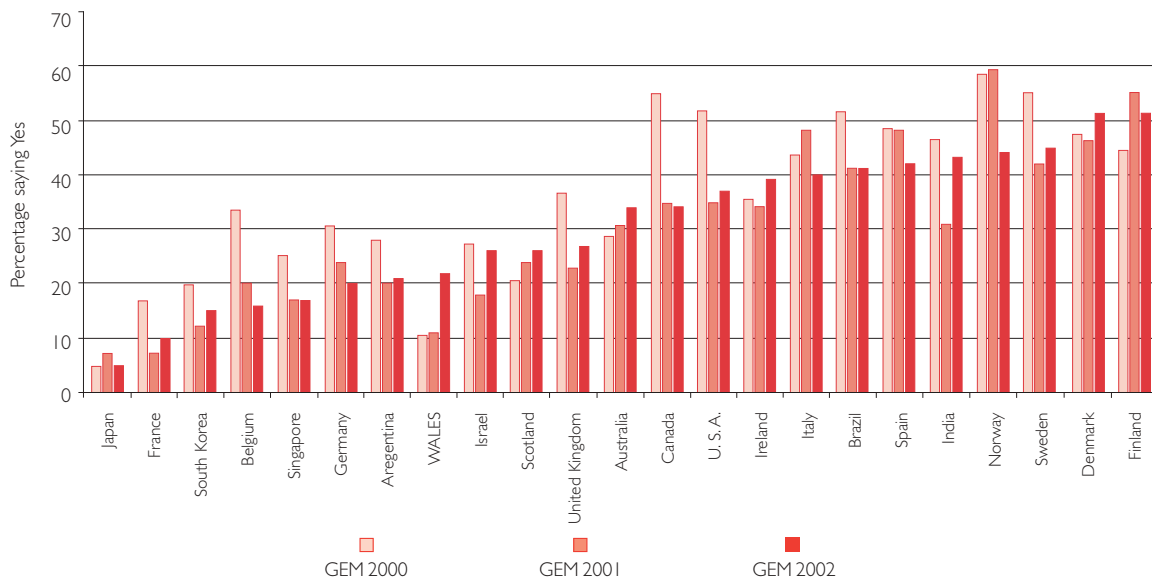
- Although the situation has been improving since the first GEM Wales study in 2000, the perception of key informants regarding whether individuals in Wales see good opportunities to create new firms is still relatively low compared to the GEM average, and well behind perceptions of the UK key informants (Figure 19). Opinion regarding the surplus of good opportunities within the Welsh economy has decreased since 2001, especially relative to other GEM nations. There has also been a decline in the assessment of whether it is easy to get business information to assess a good business opportunity, which is different to the other nations in the study.

**Figure 19** Entrepreneurial opportunities - Comparisons of Expert Opinions (Wales 2000, 2001, 2002; GEM, UK, 2002)

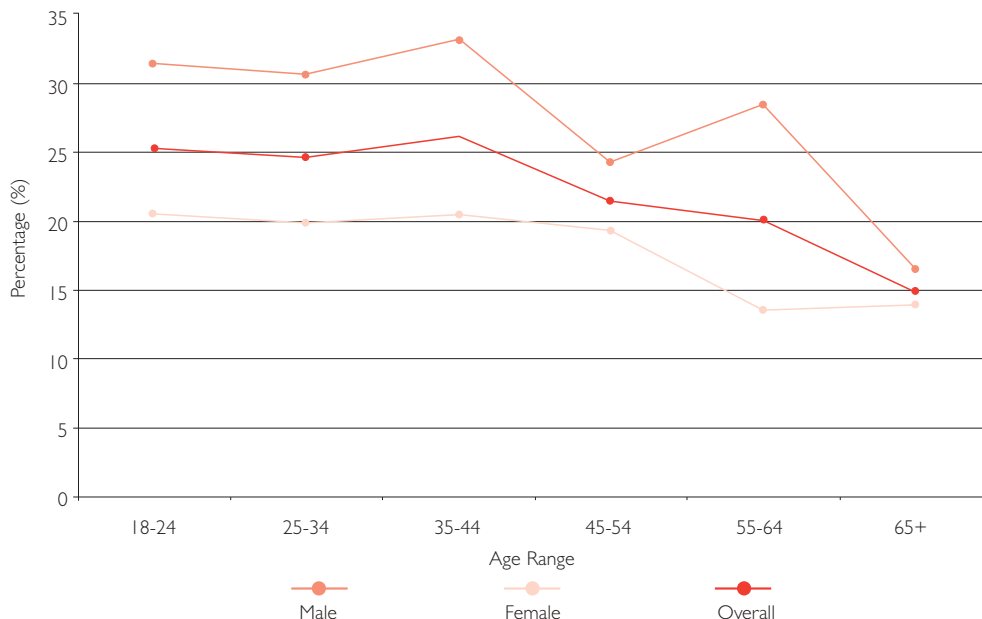


- The other two measures of entrepreneurial opportunity are of particular significance (and concern) to the future of the Welsh economy. In measuring whether opportunities are increasing for new firms, and if there are plenty of good opportunities to create truly high growth firms, there has been a steady decrease in opinions since 2000 by key respondents in Wales i.e. individuals who have their finger on the pulse of how the business sector is developing. This may be reflection of the general pessimism following the economic events of the last eighteen months or may be a more honest assessment of the state of Welsh businesses and the Welsh economy. Whatever the reason, it is clear that in the immediate future, the climate for the development of new high growth firms will not be easy and may cast some doubts on whether certain targets within the EAP regarding such entities can be met.
- Figure 20 shows that in Wales 22 per cent of the population think that there will be good opportunities to start a business during the next six months. This compares with only 11 per cent in 2001. This again places Wales in the middle group of nations. The most pessimistic nations are Japan, Poland and France. The most optimistic countries are Mexico, Denmark, New Zealand and Finland, where 51 per cent of the population thought there would be good opportunities. We consider this to be a less gloomy prediction for Wales than had been anticipated. If one considers that these figures are measures after the terrorist attacks in the US and at the time of a war in Afghanistan, it is positive that the figure should have risen rather than decline. Figure 21 confirms that people in Wales generally seem to get less optimistic about future opportunities as they get older – with the possible exception of the spike at retirement age when perhaps new opportunities can finally be exploited by potential third age entrepreneurs.

**Figure 20** "In my country there are good opportunities for a startup in the next six months" (Adult survey GEM 2000-2002)



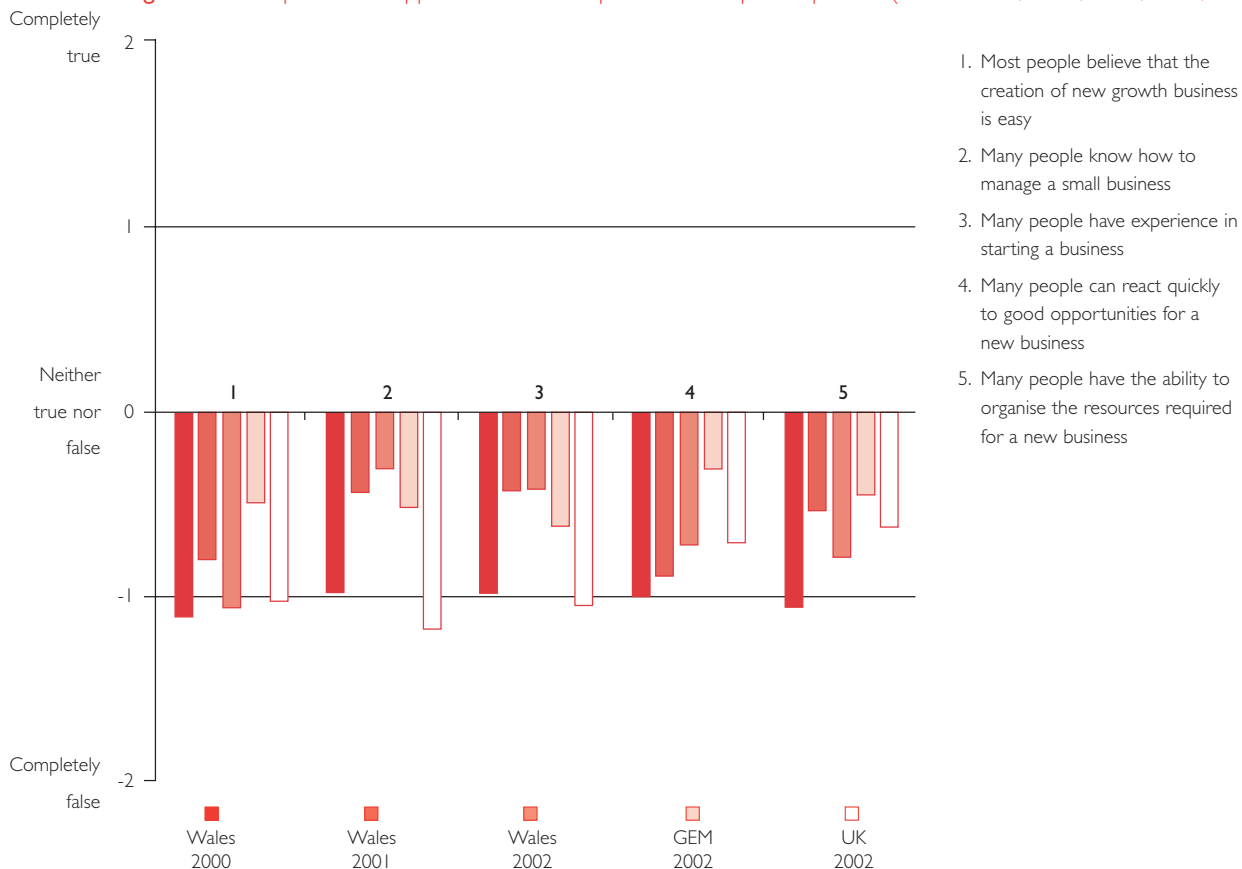
**Figure 21** Percentage of people in Wales who believe there will be good business opportunities in the next six months



### Entrepreneurial capacity

- Whilst entrepreneurial opportunity is important, individuals must also have the ability to turn that opportunity – through a combination of skill and motivation - into a real business. As Figure 22 shows, perhaps this is where the largest problem towards developing a more entrepreneurial economy lies, with all GEM nations being generally pessimistic about the ability of its citizens to realise opportunities for new enterprises into viable entities that can survive, prosper and contribute to the economy.
- Given that Wales is essentially a nation of small businesses (as the recent SBS statistics show<sup>22</sup>, only Northern Ireland is more dependent on its SME base for turnover and employment), the perception that more people, relative to the rest of the UK, know how to manage a small business and have experience in starting a small business should not be surprising (although it is still a negative perception overall). Perhaps what is more important is the measure of the ability of individuals to successfully manage a business and, in this respect, Wales does worse than the UK or the average GEM nation. In terms of policy, the question remains is whilst we are encouraging individuals to start their own businesses, are we giving them the set of skills necessary to not only start the business, but to enable it to thrive and prosper:

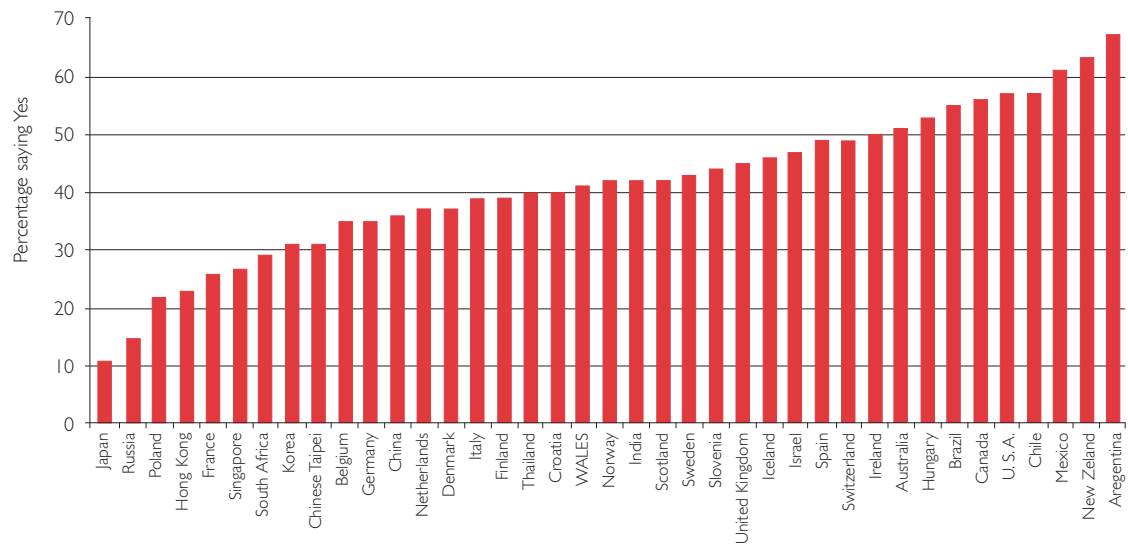
**Figure 22** Entrepreneurial opportunities - Comparisons of Expert Opinions (Wales 2000, 2001, 2002; GEM, UK, 2002)



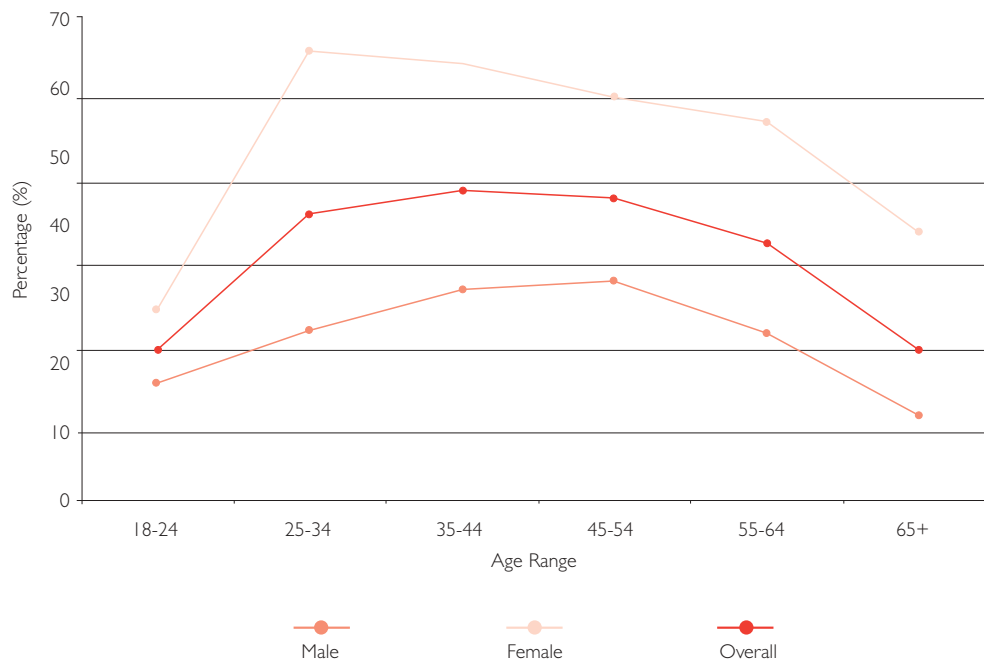
- In order for a business opportunity to be exploited, an individual must have both the skills and the motivation to make the new venture work. However, a study of the population data (Figure 23) indicates that 40.9 per cent of adults in Wales believe that they have the knowledge, skills and experience to start and business, confirming the key respondents study. This is up from 28 per cent in 2001 and can be interpreted as a positive indication of confidence. This clearly points, however, to a need for further enterprise education, as well as training and support for aspiring entrepreneurs in Wales. Figure 24 also confirms that the existing skills are concentrated in the age range 35-54 and further exposes the need for education at both ends of the age spectrum.

<sup>22</sup> Small Business Service (2003) Small and Medium-Sized Enterprise (SME) Statistics For The Regions, 2001

**Figure 23** You have the knowledge, skill and experience required to start a new business



**Figure 24** Percentage of Welsh people who think they have the skills to start a business, 2002



### Entrepreneurial Motivation

- According to the key informants, there seems to be very little motivation amongst the Welsh population in either perceiving entrepreneurship as a desirable career choice or as an appropriate way of becoming rich (Figure 25), and this perception has declined considerably since 2001.
- The question here, of course, is whether the message regarding the benefits of entrepreneurship is getting through to not only the key informants but also the wider population, given the range of innovative methods adopted to 'spread the gospel' of enterprise throughout Wales. Obviously, this is not because of low press coverage, as papers such as the Daily Post and the Western Mail were praised for highlighting local success stories of entrepreneurs who had 'made it'.

**Figure 25** Entrepreneurial motivations - Comparisons of Expert Opinions (Wales 2000, 2001, 2002; GEM, UK, 2002)

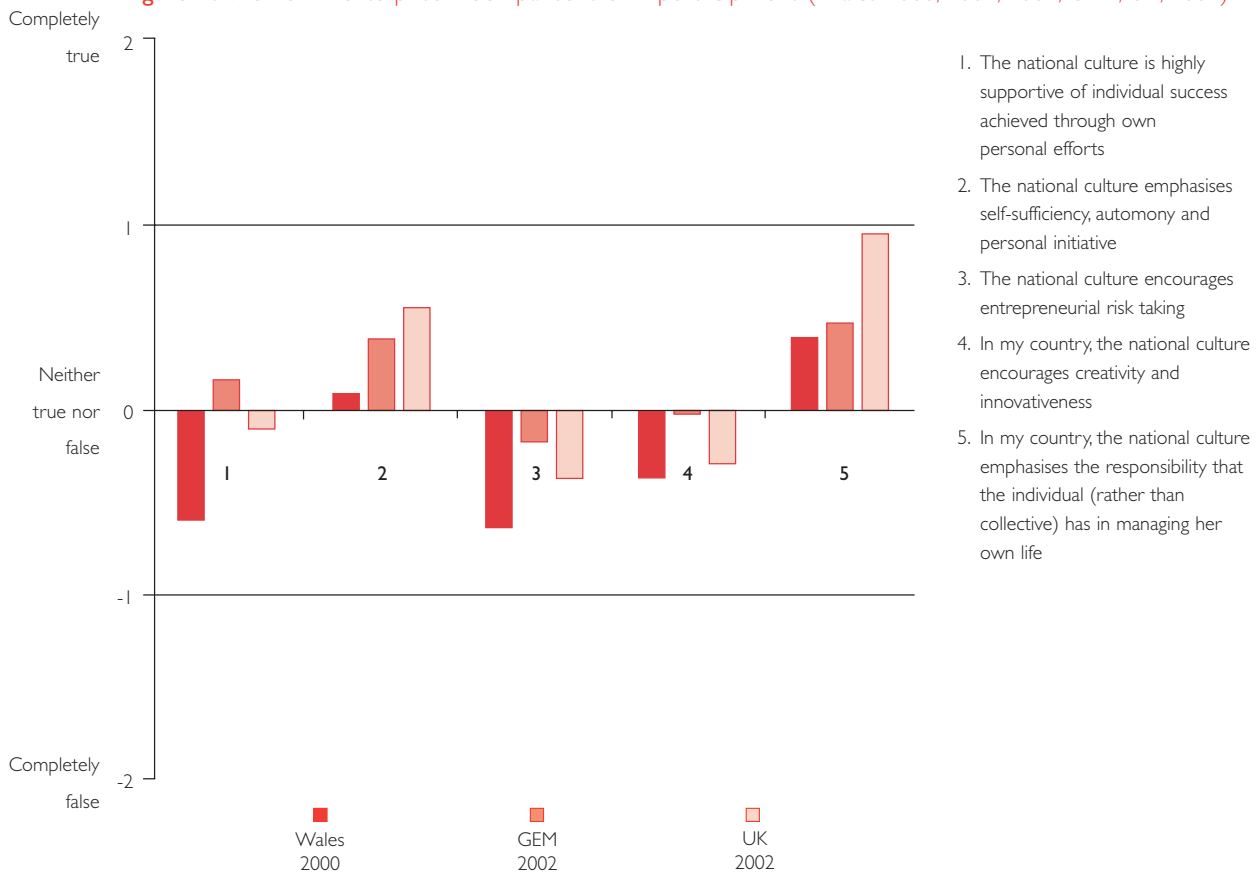


- Perhaps the key finding from this section is that key informants are ambivalent towards the level of respect and status entrepreneurs have in Wales, which is in complete contrast to the majority of the other GEM nations. This is perhaps the biggest challenge for the Entrepreneurship Action Plan, as the section on culture and social norms also demonstrated. It is clear that there needs to be a 'mindset' change within the population in Wales regarding the whole issue and importance of entrepreneurship to the Welsh economy, society and culture. Whether the current approach is actually making that difference is not supported by this evidence, although there is a long way to go in terms of the impact of the overall programme.

## Women In Enterprise

- As GEM studies have indicated every year, there is a growing importance of the role women to the development of entrepreneurship globally. Indeed, as the last year's report pointed out, facilitating greater participation by women in entrepreneurship could help close the gap between the entrepreneurial activity in Wales and other nations. Therefore, the GEM planning team have introduced a new measure of entrepreneurial activity, namely to examine the attitudes of key respondents towards the perception of the environment, within their own country, that encourages female entrepreneurship. The continued measurement of this area will help us to determine the actual impact of policies on attitudes towards women in enterprise in Wales and other countries.

**Figure 26** Women in enterprise - Comparisons of Expert Opinions (Wales 2000, 2001, 2002; GEM, UK, 2002)



- As figure 26 shows, Wales lags behind the UK and the average GEM nation in all measurements for the environment for women to participate in enterprise. Of most relevant is the fact that in three of the areas – sufficient social services, encouragement to become self employed and exposure to opportunities – there is a negative attitude towards whether women are being given the same opportunities as men to become involved in establishing their own business. It is also significant that the Wales scores worst on the question as to whether women are being encouraged to become self-employed or to start a new business, especially given the programmes that are currently running through the Entrepreneurship Action Plan to achieve this aim.



## SUMMARY AND RECOMMENDATIONS

### KEY FINDINGS FOR WALES

#### Total Entrepreneurial Activity

- In 2002, Wales had a TEA score of 3.9 per cent, which means that approximately 4 people in every 100 aged 18-64yrs in Wales were actively involved in starting or running a new firm in 2002 (or approximately 76,000 people).
- Across the Global GEM study, Wales ranks 33rd out of the total group of 39 GEM nations. Therefore, in 2002, Wales fell below Scotland (4.6 per cent) ranked 27th and the UK (5.4 percent) ranked 23rd.
- The most entrepreneurial nations in GEM 2002 were Thailand (18.9 per cent), India (17.9 per cent), Chile (15.7 per cent) and South Korea (14.5 per cent). The United States had a TEA score of 10.5 per cent, down from 11.7 per cent in 2001 – more than twice that of Wales. The lowest countries were Japan (1.8 per cent) and Russia (2.5 per cent).
- The 2002 TEA score is down from 6.0 per cent in 2001 although still considerably higher than the TEA score of 2.6 per cent reported in 2000. This represents a decline of around 35% in total entrepreneurial activity over the period 2001-2002, which is slightly higher than the 30% drop in entrepreneurial activity across the World
- Wales had 2.8 per cent of its population engaging in new business starts driven by a desire to exploit a business opportunity. 64 per cent of these opportunity-based entrepreneurs were male and two thirds of opportunity-based entrepreneurs were aged between 25 and 44 years. The opportunity-based TEA scores were 3.3 per cent in Scotland and 4.4 per cent in the UK (with the average rate for opportunity entrepreneurship being about 5.5 per cent across the whole 39 GEM nations).
- For those who had effectively no better choice but to start their own firm (necessity-based entrepreneurship), Wales has a necessity-based prevalence rate of 0.8 per cent, the same as in 2001. In contrast Scotland has a rate of 0.9 per cent, with the UK at 0.7 per cent. 40 per cent of necessity based Welsh entrepreneurs were male with a TEA score of 0.8 per cent, 60 per cent were female with a TEA score of 0.9 per cent. Globally, Brazil, Argentina, China and Chile had about 7 per cent of their population indicating that necessity had motivated their entrepreneurial whilst France and Spain had only 0.1 per cent participating in entrepreneurship out of necessity. The average for the 39 nations is approximately 1.9 per cent
- In terms of gender, the balance has improved slightly since last year - in GEM 2002, 57 per cent of Welsh entrepreneurs were male (with a TEA score of 5.3 per cent) whilst 43 per cent were female (with a TEA score of 3 per cent). This indicates that the main decline in entrepreneurial activity in Wales since 2001 has been amongst males. In terms of age, entrepreneurial activity in Wales continues to occur in the 25-44 years age range, reflecting the pattern in most other GEM nations

#### Start-Up Activity

- In terms of nascent (or start-up) entrepreneurship, only Wales had 2.1 per cent of the adult population (or approximately 36,000 people) engaged in the first processes of entrepreneurial activity at the time of the survey. This represents a decline of around a third in entrepreneurial activity, roughly the same as the average GEM nation globally. However, the rate is higher than for GEM Wales 2000, where the start-up rate was 1.4 per cent.
- The countries with the highest rate of nascent entrepreneurship are Thailand (11.3 per cent), India (10.9 per cent), Chile (10.4 per cent) and Mexico (9.2 per cent). All of these countries have a start-up rate of nascent entrepreneurship that is statistically significantly above that in Wales.

### New Firms

- Wales has a new firm prevalence rate of 2.0 per cent of the adult population engaged in running firms less than 42 months old in 2002, compared with 2.0 per cent in 2001.
- This ranks Wales 30th out of the 39 GEM nations. Poland has the lowest rate at just 0.8 per cent followed by France with 0.9 per cent. The countries with the highest rate of new firm activity are South Korea (9.3 per cent), Brazil (8.5 per cent), Thailand (8.4 per cent) and India (7.5 per cent).

### Business Angel Investment

- 1.2 per cent of the Welsh adult population identified themselves as the providers of funders for start-ups on an informal basis. This represents a massive six fold increase in business angel involvement in funding new firms on 2001 – an important indicator of entrepreneurial activity.
- With regard to the profile of the business angels, eleven were male whilst nine were female; four of the males were over 65 years of age, with the rest spread evenly across the age range; ten of the investors worked full-time, four part-time and the remainder were retired; nineteen were white with one of mixed race.

### Opportunities and barriers to entrepreneurship

- Another welcome indicator for the development of entrepreneurship in Wales is that of the perception of opportunity, which has doubled since last year to 22 per cent of the population believing that there will be good opportunities to start a business during the next six months.
- Similarly, the number of adults in Wales who believe that they have the knowledge, skills and experience to start a business has increased from 28 per cent in 2001 to 40 per cent in 2002. Both of these indicators can be rightly interpreted as a positive indication of confidence in the development of entrepreneurship in Wales.

## LESSONS FROM GEM WALES 2002

- The Global Entrepreneurship Monitor is just one measurement of entrepreneurial activity within Wales, although it is clear that this year's results reflect much of the economic pessimism as a result of the downturn in the global economy, which has seemingly deterred individuals from getting involved in entrepreneurial activity. Therefore, whilst, the decline in entrepreneurial activity in Wales has been disappointing, it was not unexpected given the results from other countries. However, not many other countries have the funding streams available for developing entrepreneurship in the way that Wales does under the Entrepreneurship Action plan and other related programmes. Therefore, despite the message of last year's GEM report of 'steady as she goes', we now believe that there has to be a change in gear during the next couple of years to ensure that Wales starts developing a greater entrepreneurial culture that leads to more start-ups and, perhaps most importantly, more growth-oriented businesses. This may require a review of existing EAP activities to focus on those that are actually making a difference to the growth in entrepreneurship and addressing those projects that, for whatever reason, are not contributing to developing enterprise in Wales.
- The issue of finance is no longer of major concern to the vast majority of small firms, mainly because of lower interest rates, a beneficial grant regime via the National Assembly and the increasing involvement of Finance Wales in both the loan and equity markets. However, the evidence suggests that Wales has yet to become a centre for the 'larger' finance deals and there is still concern that the provision of private equity is still not adequate for the development of high growth firms. Whether the absence of such funds makes the case for the development of a 'knowledge bank' for high technology venture starts compelling is uncertain. However, what is clear that Wales will not be in a position to join the 'premier division' of entrepreneurial regions until there is some presence from venture capital investors in Wales, either generated internally or attracted here.
- Wales has done better this year in terms of the gender balance in entrepreneurial activity and female involvement in entrepreneurial activity has remained relatively steady since 2001. However, there continues to be a perception amongst key informants that Wales continues to lag behind other GEM nations in developing measures to encourage women to participate in enterprise. Further action is required to ensure that any gap in provision of support is being closed under various measures of the Entrepreneurship Action Plan, especially given the importance of women in reducing the entrepreneurial activity deficit within many nations, including Wales. The decline in the number of men involved in entrepreneurial activity is also worrying, especially given the amount of support for 'mainstream' enterprise activities. If Wales is to develop an enterprise economy, it is important that whilst the number of women involved in entrepreneurial activity increases, the number of men involved does not decline.
- There are signs that attitudes towards entrepreneurship are slowly changing, despite the decline in entrepreneurial activity this year. Not only has the number of individuals that believe that there will be good opportunities to start a business in Wales doubled, but four of every ten adults also believe that they have the skills to start and manage that business. The main key to converting this result into actual start-ups here is to discover the 'trigger' that moves opportunities into real business ideas. Certainly, with the amount of support that is currently available for individuals to start a business in Wales, there could (and should) be an increase in entrepreneurial activity next year. However, as this year's GEM study has shown, continuing economic uncertainties may mean that people do not take that step into working for themselves, despite the opportunities and skills available.
- For politicians and policy-makers in Wales, the growing perception (since GEM 2000) that the support for new and growing firms at local and national government levels is increasing, is good news for those involved in developing entrepreneurship. The emphasis on the development of policies such as the Assembly Investment Grant and many aspects of the Innovation Action Plan suggest that entrepreneurs, and their businesses, are becoming important 'customers' for government at all levels in Wales. Interestingly, the one area in which the Welsh Assembly does not have any influence – namely taxation – is the one which remains a key issue for the development of entrepreneurship.

- Perhaps, the most significant challenge for the government will be the marrying of public and private sources of business support together. Certainly, the commercial and professional infrastructure in Wales is held in high regard (which is in contrast to the perception of the public sector provision). Therefore, bringing the public and private sector closer together to provide a coherent set of programmes to enable our SME sector to become more efficient, effective and competitive in the market place, remains one of the major challenges for economic policy in Wales.
- The most worrying aspect of the GEM analysis for this year is the fact that the perception of enterprise education and training within Wales remains poor, despite the considerable funding aimed at this area through projects such as the Knowledge Exploitation Fund. Perhaps the challenge here is for greater co-ordination between (and across) the different educational sectors to ensure that schools, colleges and universities are 'singing from the same hymn sheet' when it comes to the development of enterprise within the educational system and, perhaps, most importantly, outside of it.
- Following the results of last two GEM studies, there is again general agreement that there are considerable problems in effectively transferring technology in Wales from the laboratory into the market-place, with the overall opinion being that the current links between industry and academia are inadequate. Therefore, the development in 2002 of the Innovation Action Plan is to be welcomed, although whether the barriers that restrict interaction between universities and Welsh business will be overcome or reinforced as a result of such a policy intervention remains to be seen.
- The various questions regarding entrepreneurial culture in Wales have changed this year, so a longitudinal analysis of changes is not possible. However, the study continues to reveal that there is still a strong perception that Wales has a society and culture that is not supportive of entrepreneurial success, does not encourage creativity and innovation, and does not emphasise autonomy and personal initiative. This could mean that the message is not reaching the population. On the other hand, it could suggest that changing the culture of a nation that has been largely dependent on large employers and not on entrepreneurial initiative may take longer than envisaged in the original EAP, and will require ongoing resources.
- The study suggests that there is still considerable ambivalence respecting the status of entrepreneurs within Welsh society, which seems to contrast with the experiences of many other nations. It still seems to be the case that becoming an entrepreneur is neither desirable or appropriate within the wider society, despite the range of innovative methods adopted to raise the profile of entrepreneurship in Wales. Given this, it is clear that changing the attitudes of the population towards entrepreneurship is a long term project, although with the amounts of funding being allocated to this mission, it is important that there are successful examples of changing the relative importance of entrepreneurship within Welsh society and culture.
- Finally, it is clear that the results of this study are important to the monitoring and improvement of an entrepreneurial economy within Wales. As a research project, the Global Entrepreneurship Monitor continues to evolve at the national and international level. For example, this year the Welsh team is being more closely integrated with the UK project and the first results for Wales GEM 2003 will be released at the end of this year. However, it is clear that there are certain limitations to the data gathered – having such a small sample means that very little detailed analysis can be undertaken of entrepreneurial activity. Therefore, the researchers are looking to expand the study for 2004 into a more detailed study of entrepreneurship across Wales, working closely with partners at a local and regional level, to ensure that GEM can give us a more detailed account of how entrepreneurship is developing within all parts of Wales.

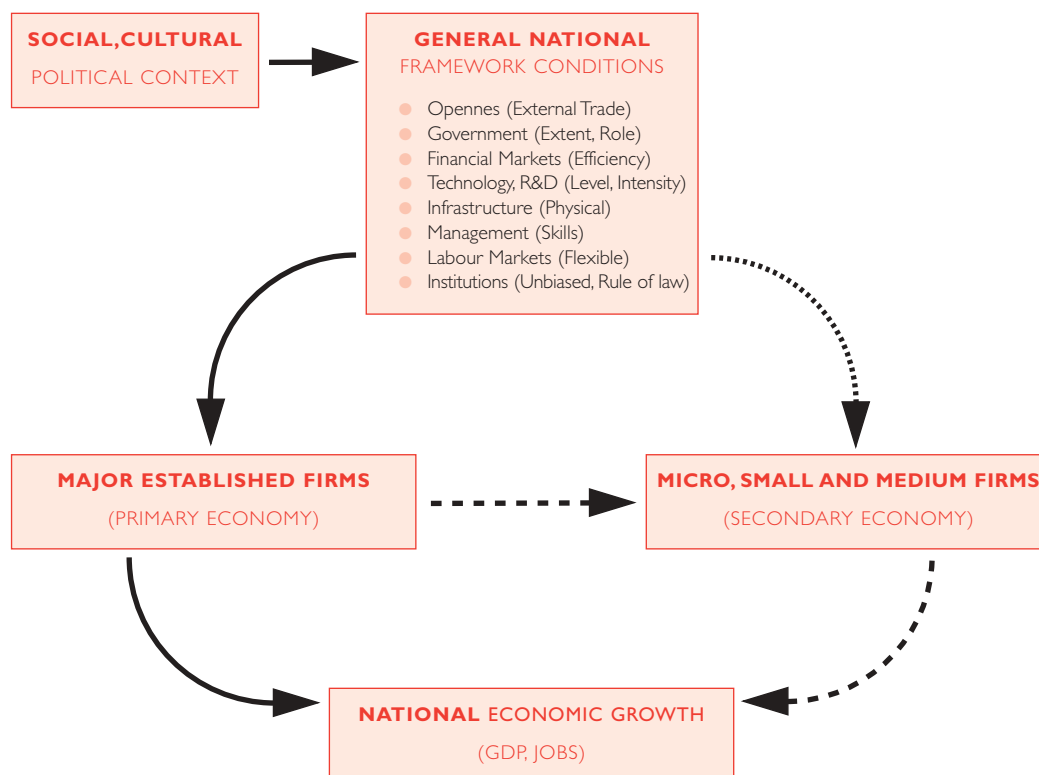
## APPENDIX

### THE GEM MODEL

At the heart of the GEM project is the development of an understanding of the relationship between entrepreneurship and economic growth. Previous approaches examining **economic growth** (including GDP and employment growth) have tended to focus on the contribution of large established firms rather than smaller firms, assuming that the former, rather than the latter, are the engines of prosperity in modern economies.

These conventional models - such as the Global Competitiveness Report - also tend to concentrate on examining the relationship between **General National Framework Conditions** (external trade; role of government; efficiency of financial markets; level and intensity of R&D; physical infrastructure; management skills; flexible labour markets and legal institutions) and the impact these will have on the performance of larger businesses. Figure 1 illustrates this conventional approach to the process leading to economic growth via larger businesses.

**Figure A** Role of larger established firms and economic growth



Such a model is conspicuous for its absence of entrepreneurship as a driver for economic growth. The role played by the small-to-medium sized firm sector is relegated to that of a supporting actor, involved in the supply of goods and services to larger established businesses. This is despite empirical evidence demonstrating that large firm activity can explain only a proportion of the variation in economic growth within a nation.

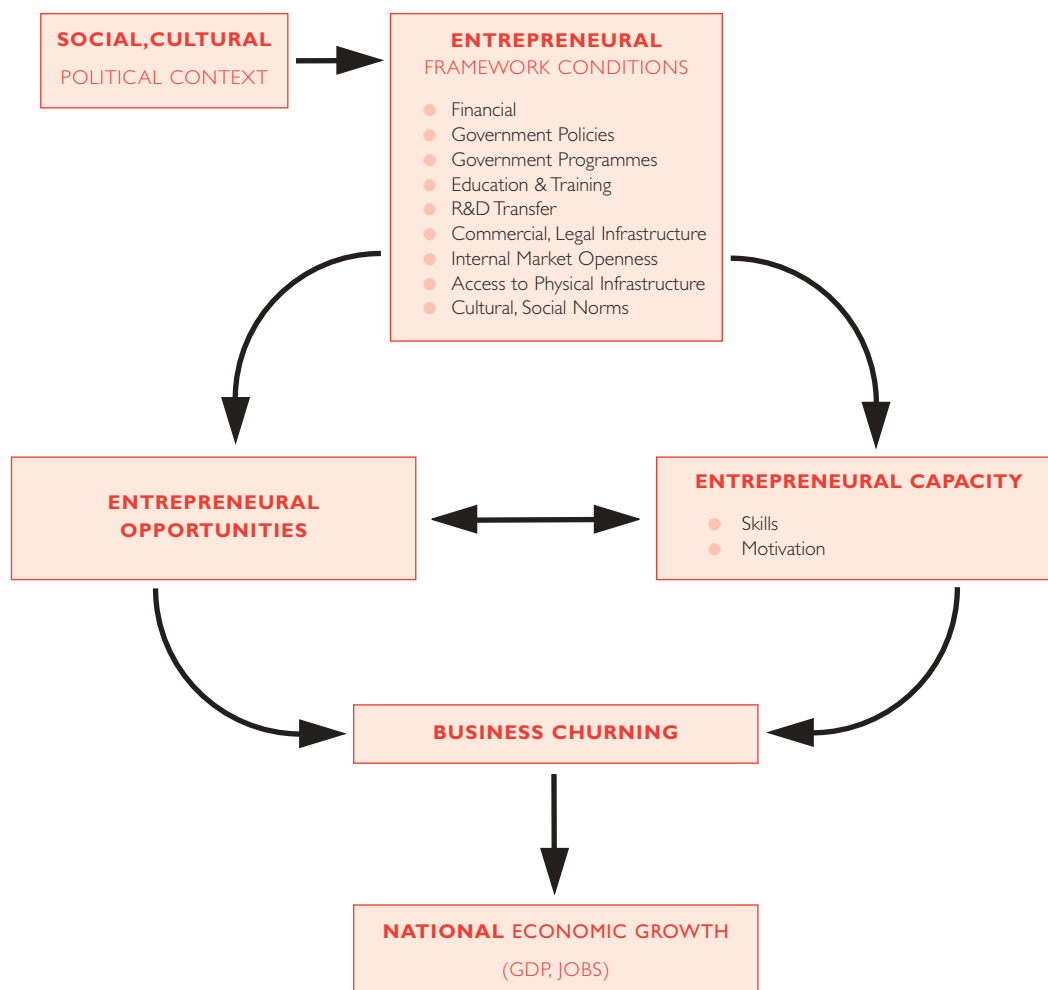
As figure 2 demonstrates, entrepreneurship can have a direct impact on national economic growth. This model includes a large number of factors ignored in the conventional economic models. Firstly, it can be recognised that entrepreneurial activity is shaped by a distinct set of factors – the **Entrepreneurial Framework Conditions**. These include:

- The availability of financial resources for new and growing ventures
- Government policies and programmes designed to support new and growing ventures
- The level of entrepreneurship education and training for practising entrepreneurs
- Technology transfer
- Availability of commercial and professional services
- Ease of access to new markets
- Access to physical infrastructure
- Cultural and social norms that affect initiative and self-sufficiency

Secondly, the level of entrepreneurial activity is directly related to the ability of individuals to recognise that **entrepreneurial opportunities** are available and, more importantly, that those individuals have the **entrepreneurial capacity** - motivation and skills - to exploit them.

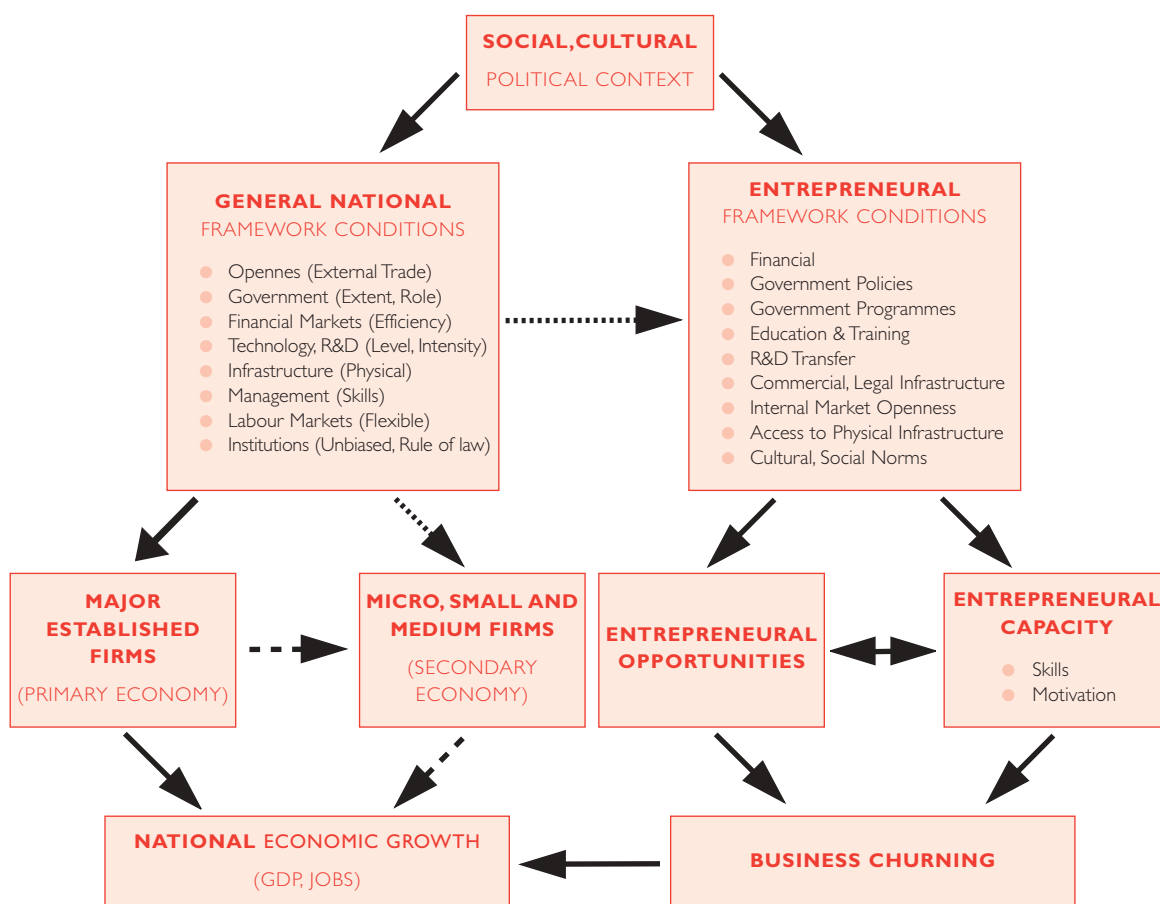
It is the interaction between entrepreneurial opportunity and capacity that leads directly to the creation of start-ups within an economy. However, as an economy creates new births and subsequent jobs, it is likely that there will also be a corresponding increase in firm deaths and job destruction. The intensity of this process, known as **business churning**, contributes to greater economic growth.

**Figure B** The Entrepreneurial process and economic growth



Clearly, neither the conventional nor the entrepreneurial model gives a full understanding of national economic growth. However, by combining both approaches, we can determine the influence of both large firms and new entrepreneurial businesses on the development of economies, although the mix or contribution made by each model will inevitably vary by country. As figure 3 demonstrates, this new model also indicates that existing firms can be a significant source of start-ups. More importantly, the context in which an entrepreneurial sector can operate is made explicit. This model will help achieve the primary objective of the GEM model, namely an understanding of how the entrepreneurial process operates and the contribution it makes to economic growth.

**Figure 40** The GEM Conceptual Model (The Total process)



## SOURCES OF DATA

The GEM project uses three main sources of data, two of which are unique to the project:

**Adult Population Survey** - An extensive population survey measured the entrepreneurial behaviour and attitudes of the adult working-age population (18-64 years old). In GEM 2002, well over 100,000 individuals were surveyed across the World, with 2000 respondents in Wales. These surveys produce an unique measure of entrepreneurial activity - the Total Entrepreneurial Activity Index (TEA) - which is the only existing measure of entrepreneurial activity that provides a meaningful basis for international comparisons.

**Key informant interviews** - In the 37 GEM countries and the 2 GEM regions of Wales and Scotland, more than 1000 in depth-interviews were carried out with key informants by members of the national and regional GEM teams (Canada and Russia did not report). One-hour face-to-face interviews were conducted with 36 Welsh experts, covering each of the nine framework conditions. In addition, each expert completed a brief structured questionnaire involving standardised assessments of important aspects of the Welsh entrepreneurial sector. All open-ended discussions with the key informants were recorded and transcribed to allow for a qualitative content analysis, allowing the Welsh GEM team to capture issues and trends that fell outside the areas discussed in the structured questionnaires.

**National economic data** - For all national teams involved in the GEM study, extensive economic data was collected from sources such as the OECD, United Nations, as well as other international research initiatives such as the World Competitiveness Yearbook and the Global Competitiveness Report. In Wales, comparable data (where available) was collected from a variety of national and regional sources such as Labour Market Trends, Office for National Statistics and NOMIS (National On-line Manpower Information System).

As a result of this enormous data collection exercise, it has been possible to provide a detailed illustration of entrepreneurial activity in 39 nations. More importantly in Wales, it has given us the opportunity, for the first time, to benchmark ourselves against the most prosperous and entrepreneurial countries in the World.