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

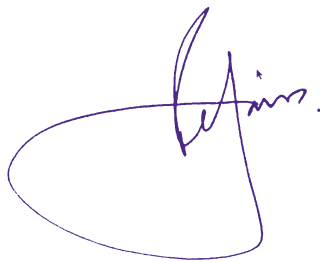
This second Global Entrepreneurship Monitor (GEM) survey of Wales is evidence of a significant improvement in the past year of our country's status as an enterprising nation.

Since 2001 we have been building steadily to ensure that Wales develops its standing in the global economy alongside the other countries studied by the GEM such as the USA, Australia and Norway.

The results from the survey highlight that Wales is home to a burgeoning movement of business pioneers, with an impressive 2.9 per cent of its adults now engaged in flourishing start-up businesses. Wales now ranks 17th out of the 31 nations monitored in the GEM study of firms less than 42 months old, a position above both the UK as a whole and Scotland, in 19th and 28th place respectively. This notable achievement inspires confidence amongst our large population of potential business start-ups.

During the last year, the Welsh Development Agency and National Assembly have worked together to create the Entrepreneurship Action Plan. The plan is changing attitudes of people nationwide and helping to drive them forwards into new start-up business activities. Currently 4.4 per cent of Wales' adult population is focused on a fresh business venture of their own, helping to increase and develop a healthy and successful entrepreneurial culture.

We still have a long way to go on our voyage of entrepreneurship. However, I look forward with confidence to next year's study, where we will begin to see the fruits of the important changes that have been instigated within our business support networks to ensure that they are fully equipped to assist enterprises throughout Wales.

A handwritten signature in blue ink, appearing to read 'Roger Jones', enclosed within a large, loopy, hand-drawn oval shape.

ROGER JONES
CHAIRMAN, WELSH DEVELOPMENT AGENCY

GEM 2000 CO-ORDINATION TEAM, NATIONAL TEAMS AND SPONSORS

Unit	Location	Members	Financial Sponsorship
GEM Project Directors	Babson College, Kauffman Center for Entrepreneurial Leadership, London Business School	William D. Bygrave Michael Camp Michael Hay	Kauffman Center for Entrepreneurial Leadership Ernst & Young
Sponsor	Kauffman Center for Entrepreneurial Leadership	Michael Camp	
GEM Project Co-ordinator	Babson College London Business School	Paul D. Reynolds	The Laing Family Charitable Settlement
GEM Co-ordination Team	Babson College London Business School	William D. Bygrave Paul D. Reynolds Paul D. Reynolds Michael Hay Andreas Rauch Paloma Lopez-Garcia	
National Teams			
Argentina	Center for Entrepreneurship IAE Business School University Austral	Silvia Torres Carbonell Hector Rocha Florenia Paolini	IAE Business School HSBC Private Equity Latin America
Australia	Swinburne University of Technology	Kevin Hindle Susan Rushworth Natalie De Bono	Pacific Access Pty Ltd
Belgium	Vlerick Leuven Gent Management School	Sophie Manigart Bart Clarysse Hans Crijns Hilde Goossens Nico Vermeiren Anneleen Waterloos	Vlerick Leuven Gent Management School
Brazil	IBQP - PR Instituto Brasileiro da Qualidade e Produtividade no Paraná	Lúcio Renato de Fraga Brusch Marcos Mueller Schlemm Simara Maria S. Greco Mariano de Matos Macedo Raphael Proença	IBQP - PR Instituto Brasileiro da Qualidade e Produtividade no Paraná SEBRAE -Serviço Brasileiro de Apoio às Micro e Pequenas Empresas
Canada	York University and École des Haute Études Commerciales de Montréal	Rein Peterson Nathaly Riverin Alex Gavriline Carol Chan Yasmin Griffith Augustina Cochello	Anne & Max Tanenbaum Chair in Family Enterprise; Dean's Office, Schulich School of Business, York University; École des Hautes Études Commerciales de Montréal, Development économique Canada
Denmark	University of Southern Denmark	Mick Hancock Kim Klyver Torben Bager	Danish Agency for Trade and Industry Ernst & Young (Denmark)
Finland	Helsinki University of Technology	Erkko Autio Pia Arenius Anne Kovalainen	Ministry of Trade and Industry Tekes, National Technology Agency of Finland
France	EM Lyon	Thierry Volery Isabelle Servais Aurelien Eminent Matthieu Cabrol	Caisse des Dépôts et Consignations Chaire Rodolphe Mérieux Entreprendre
Germany	Department of Economic and Social Geography University of Cologne	Rolf Sternberg Heiko Bergmann	Deutsche Ausgleichsbank Ernst & Young
Hungary	Janus Pannonius University/ University of Baltimore	Laszlo Serb Zoltan Acs Attila Varga Jozsef Ulbert	University of Pecs, Ministry of Economic Affairs, University of Baltimore
India	Indian Institute of Management Bangalore	Ritesh Dhar Mathew Manimala Srinivas Prakhya	N S Raghavan Centre for Entrepreneurial Learning IIM Bangalore
Ireland	University College, Dublin	Paula Fitzsimons Colm O'Gorman Frank Roche	Enterprise Ireland Forfas
Israel	Tel-Aviv University	Miri Lerner Yoash Avrahami	HTMS: High-Tech School at Faculty of Management, Tel-Aviv University; The Israel Small Business Authority; The Evens Foundation

Unit	Location	Members	Financial Sponsorship
Italy	Babson College	Maria Minniti	W. Glavin Center for Entrepreneurial Leadership, Babson College
Japan	Keio University	Tsuneo Yahagi Takehiko Isobe	Monitor Company
Korea	Soongsil University	Yun-Jae Park Heon Deok Yoon Young Soo Kim Woo Hyun Cho Yoon Jae Lee	Brain Korea 21 Project for Developing Teaching and Research Programmes for Entrepreneurial Small Business
Mexico	EGADE	Maria Campos Elvira E. Naranjo Priego	EGADE, ITESM Graduate School of Business Administration and Leadership
Netherlands	EIM Business and Policy Research	Sander Wennekers Niels Bosma Heleen Stitger Roy Thurik	Dutch Ministry of Economic Affairs
New Zealand	New Zealand Centre for Innovation and Entrepreneurship	Howard Frederick Peter Carswell Peter Mellalieu Yola Macken Bill Bygrave Ian Caston Arjan Bartlema	Ernst & Young Entrepreneurial Services, Lowndes Associates, Ministry of Economic Development, The Tindall Foundation, Science and Industry Advisory Council UNITEC
Norway	Bodø Graduate School of Business	Lars Kolvereid Lars Øystein Widding Erlend Bullvåg Svenn Are Jenssen Elin Oftedal Bjørn Willy Åmo	Norwegian Industrial & Regional Development Fund (SND) Bodø Graduate School of Business
Portugal	Faculdade de Economia da Universidade Nova de Lisboa	Augusto Medina José Neves Adelino José Mata João Silveira Lobo Augusto Medina Mark Spinoglio Jack Tyndall Emanuel Oliveira	IAPMEI - Instituto de Apoio as Pequenas e Média Empresas e ao Investimento, BPI - Banco Português de Investimento
Singapore	National University of Singapore	Poh-Kam Wong Finna Wong	Economic Development Board of Singapore
South Africa	Centre for Innovation and Entrepreneurship, Graduate School of Business, University of Cape Town	Amanda Driver Mike Herrington Nick Segal Eric Wood	Liberty Financial Services Group, Standard Bank of South Africa, South African Breweries
Spain	Instituto de Empresa	Julio DeCastro Joseph Pistrui Boyd Cohen Rachida Justo Alicia Coduras	NAJETI Chair of Entrepreneurship and Family Business
Sweden	ESBRI - Entrepreneurship and Small Business Research Institute	Magnus Aronsson Frédéric Delmar Helene Thorgrimsson	Confederation of Swedish Enterprise, Ministry of Industry Employment and Communications, Swedish Business Development Agency
United Kingdom	London Business School	William D. Bygrave Michael Hay Paul D. Reynolds	UK Department of Trade and Industry, Ernst & Young
United Kingdom, Scotland Unit	University of Strathclyde	Jonathan Levie Laura Steele Hunter	Hunter Centre for Entrepreneurship
United Kingdom, Wales Unit	University of Glamorgan University of Wales, Bangor	David Brooksbank Dylan Jones-Evans	Welsh Development Agency
United States	Babson College	Heidi Neck Andrew Zacharakis William D. Bygrave Michael Meeks	Kauffman Center for Entrepreneurial Leadership

EXECUTIVE SUMMARY

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. The research in Wales is led by Professor Dylan Jones-Evans of the University of Wales Bangor and Professor David Brooksbank of the University of Glamorgan.

This is the second year that Wales has taken part in the study, along with thirty other nations around the World including the USA, Russia, UK, Ireland and Scotland. The primary data for the study of Wales was collected from an adult population survey of 2015 individuals, together with 36 interviews with Welsh experts on entrepreneurship.

Background to GEM in 2001

- **Economic performance in Wales continues to lag behind the UK.** The publication of the Welsh Assembly Government's economic strategy 'A Winning Wales' has highlighted new targets for economic growth over the next decade. Set against a background where Wales has consistently lagged behind other regions of the UK, the target of closing the prosperity gap looks ambitious. A central plank of this policy is 'entrepreneurship' - which makes accurate research and evaluation of entrepreneurial capacity in Wales even more important.
- **Public policy is now in support of entrepreneurship.** Numerous initiatives have already had a chance to launch and act. These include the Entrepreneurship Action Plan (EAP), Finance Wales and the Knowledge Exploitation Fund. GEM 2001 has started to collect comment from experts on the results and achievements to date.
- **GEM 2001 data gathering process was completed prior to September 11th 2001.** The horrific events in New York sent tremors throughout the world. Entrepreneurship is associated with risk and, for many months, large numbers of people retreated from any possible exposure to personal risk, including new business. The data analysed in this report, especially the comments from the Global GEM report, reflect only a general sense of impending recession. Views may well have been different if collected after the attacks.

How entrepreneurial is Wales?

- **The rate of Total Entrepreneurial Activity in Wales has risen in 2001.** The main GEM index for Wales now shows 6 per cent of adults now engaged in entrepreneurial activity - either in actively entering the start-up process or running a new small firm - which is up from 3.7 per cent in 2000. Wales still ranks lowly at 26th out of 31 GEM nations, although this is above Scotland this year.
- **Wales continues to have a low rate of individuals involved in the process of starting a business** - only 3.1 per cent of the adult population in Wales were actively engaged in 2001. This ranked Wales at 28th out of the 31 GEM nations. This was an improvement on 2000, when the rate was only 1 per cent and Wales now has the same rate as Scotland. The UK, however, has a rate of 4.9 per cent compared to the leading nation, Mexico, which has a start-up rate of some 12.7 per cent. Clearly an economic development strategy built around entrepreneurship requires a steady, high rate of new firms to be created. These results suggest that Wales is a long way from achieving this.
- **Wales has a low rate for new business management** - only 2.9 per cent of the adult population are engaged in running firms less than 42 months old. This puts Wales in 17th place, approximately the average for European nations.
- **Entrepreneurs in Wales start new firms to pursue opportunities rather than out of necessity** - Wales has a rate of Opportunity based entrepreneurship of 4.4 per cent. This compares to 3.4 per cent in Scotland and 5 per cent in the UK and ranks Wales at 25th out of the 31 GEM nations. Wales has a necessity-based prevalence rate of 0.8 per cent, the same as Scotland, with the UK at 1.4 per cent.

- **Wales has few new firms with growth aspirations** - no new firms unearthed by this study had any ambition to grow beyond fifty employees over the next five years. In fact, few had any intention of growing beyond the founder plus a few additional workers.
- **Wales still has the lowest rate of 'business angel' activity of any GEM nation** with an informal investment prevalence rate of 0.2 per cent. Both Scotland and the UK have rates above 2 per cent and the top nations include the US (5.7 per cent) and New Zealand (6.8 per cent). All of the investments made in Wales were in businesses established by close relatives.
- **In Wales, a man is roughly two and half times as likely to be an entrepreneur than is a woman** - 8.8 per cent of men are active entrepreneurs in Wales, compared to 3.5 per cent of women. The disparity between the genders means that specific policies directed towards female entrepreneurship may be justified because the fact that so few women, relative to men, are active as entrepreneurs goes a long way toward explaining why countries such as Wales have much lower TEA scores.
- **There is very little start-up activity by the corporate sector in Wales** - only 10 per cent of new firms are being established by individuals trying to start a new business or a new venture with their employer
- **There is a low perception of opportunity in the market place** - only 11 per cent of the Welsh adult population believe that there are good opportunities to start a business during the next six months, placing the country 28th in the GEM study (with only Hungary, Japan and France being more pessimistic). The average for the GEM nations was 29 per cent.
- **Welsh potential entrepreneurs claim not to be afraid of failure** - repeating the result from GEM 2000. However, only 28 per cent of adults interviewed claimed that they had the skills necessary to actually start or run a small business.

Key policy recommendations

- **'Steady as she goes'** - entrepreneurship appears to be slowly becoming more prevalent within Wales, although there needs to be considerably more work undertaken to embed an enterprise culture within Welsh society
- **Finance and follow through with the Entrepreneurship Action Plan for Wales** - projects are beginning to have an effect on the perception of entrepreneurship by the Welsh public that may have begun to feed through into actual start-ups. The work to raise national awareness of entrepreneurship and to promote an entrepreneurial culture (and driven through £10 million of funds secured via Objective 1) is clearly going to be crucial in delivering part of this programme.
- **Proceed with extreme caution with a Business Birth Rate Strategy** - whilst this initiative may help to create greater entrepreneurial activity, it is important to heed the lessons of other nations, such as Scotland, that have attempted to increase the number of start-ups through a direct interventionist approach.
- **Recognize the core task of *developing entrepreneurship*** - raising the business birthrate is only one dimension of this. This means that agencies need to move away from reliance on simplified, over-arching targets and begin to recognize the need to address variations in performance across the region in terms of the cost and impact of providing support to start-ups.
- **Promote support for more start-ups by women and young people** - considerable work has been started and undertaken under the **Potentia** project umbrella. GEM 2001 points to the need for further work to address the imbalance in participation in entrepreneurial activity by these groups.

- **Increase the number of corporate spinouts emerging from Welsh businesses and provide resources to help develop growth businesses in Wales** - GEM 2001 shows Wales rooted firmly at the bottom of the world league in these important areas. The evidence suggests that countries that have a high number of corporate spinouts and a high number of rapidly growing businesses reap the rewards with a far higher rate of economic growth.
- **Embed enterprise education in every level of the educational process** - the GEM study further suggests that there are few people who also believe that they have the necessary skills to manage a business. This key issue of relevant enterprise education and training is something that organisations such as ELWa need to address as a matter of urgency. However, entrepreneurial education at all levels should be seen as an integrated process, not as an add-on to current activities, which is the approach that a number of current prominent programmes are pursuing.
- **Begin a programme of equity education amongst potential investors and small businesses in Wales** - Finance Wales needs to highlight the positive benefits of investing in enterprise.
- **Provide investment in research and development infrastructure** - despite the plethora of schemes that have been developed Wales still does not have the scientific and technology infrastructure required for a high value knowledge economy and which can support the development of a strong high technology small firm sector. The Welsh Assembly Government needs to address both with support for universities and private firms to create the innovative high technology ventures that will become increasingly important in the development of a knowledge-based economy. The first step should be the establishment of a Welsh Council for Science, Technology and Innovation, consisting of leading science academics and technological industrialists/entrepreneurs, to advise the Welsh Assembly Government on the strategic direction for investment in science, technology and innovation, on key funding decisions for promoting greater investment in R&D, and on the development and implementation of all-Wales programmes in science and technology.
- **Make better use of existing expertise in entrepreneurship** - there is a wide body of academic and practical expertise for Welsh politicians and policy-makers to utilise in this area and full advantage should be taken of this to develop the best policies and practices for Welsh enterprise. To date, very little use has been made of the expertise available within Welsh institutions (and in their national and international networks) to help develop the Entrepreneurship Action Plan further.

INTRODUCTION TO GEM

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.

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?

Published in 1999, the first GEM report encompassed the G7 countries (Canada, France, Germany, Italy, Japan, the United Kingdom and the United States) as well as Denmark, Finland and Israel. Last year, a further thirteen nations (including Scotland and Wales) joined the study. In this, the third annual assessment of GEM, a total of 31 nations took part in the study:

- European Region - Belgium, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Russia, Spain, Sweden, the United Kingdom, Scotland and Wales
- Asian Region - India, Japan, Korea and Singapore
- Latin American Region - Argentina, Brazil and Mexico
- North American Region - Canada and the United States
- Other Regions - Australia, Israel, New Zealand and South Africa

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 2001, nearly 80,000 individuals were surveyed and over 950 experts interviewed around the world. In Wales, 2015 individuals were surveyed and 36 national experts were interviewed.

This year's study incorporates a number of new features, including the distinction between 'opportunity' and 'necessity' entrepreneurship. In other words, the difference between those individuals who perceive an opportunity in the market-place and establish their business to pursue this, as compared to those entrepreneurs who start a new business because they have no better choice of work.

Summary results of the global study were published in November 2001 in the Global Entrepreneurship Monitor: 2001 Executive Report. At the global level, the findings for GEM 2001 may be summarised as follows:

- **Entrepreneurship is a global phenomenon with significant differences between countries.** About 1.4 billion working-age individuals (20 to 64 years old) live in the 31 GEM 2001 nations. Slightly less than 10 per cent of these people are, at any point in time, in the process of creating and growing new businesses. Thus, in the GEM nations alone, almost 150 million people are engaged in some form of entrepreneurial activity! And the level of that activity varies from country to country, from a low of approximately 5 per cent of the adults in Belgium and Japan to about 18 per cent in Mexico. In Wales, 6 per cent of the adult population is involved in starting or running a new firm. In addition, about 3 per cent of the adults in the 29 countries have recently invested personal funds into the new businesses of other individuals, although Wales has only 0.2 per cent involved in such activities - the lowest of any GEM nation.

- **Entrepreneurship is a multi-faceted phenomenon.** The GEM 2001 assessment uncovered a dynamic dimension inside entrepreneurial activity. Each respondent was asked to indicate whether he was starting and growing his business to take advantage of a unique market opportunity (opportunity entrepreneurship) or because it was the best option available (necessity entrepreneurship). The average opportunity entrepreneurship prevalence rate across the 29 GEM countries was about 6.5 per cent, while the average for necessity entrepreneurship was 2.5 per cent. Four countries ranked highest in opportunity entrepreneurship (in alphabetical order): Australia, Mexico, New Zealand and the United States. Five countries ranked among the highest group for necessity entrepreneurship (in alphabetical order): Brazil, India, Korea, Mexico and Poland. The analysis indicated that developing countries generally have a higher prevalence rate for necessity entrepreneurship. In Wales, the opportunity prevalence rate was 4.4% whilst the necessity rate was 0.8%.
- **The relationship between entrepreneurship and economic growth is complex.** The prevalence rate for necessity entrepreneurship in 2001 was positively associated with national economic growth. This association was stronger when countries highly dependent on international trade - Belgium, Hungary, Ireland, the Netherlands and Singapore - were excluded, as well as both regions studied - Wales and Scotland. The prevalence rate of opportunity entrepreneurship, on the other hand, was not associated with any measure of national economic growth. Without longitudinal data it is difficult to unravel the mystery of causality in these relationships. However, it does appear that in developing countries, necessity entrepreneurship may have a strong macro-economic function.
- **Several national contextual factors influence the level of entrepreneurial activity.** Both opportunity and necessity entrepreneurship were higher in countries where there was greater income inequality and where the adults expected the national economic situation to improve. Opportunity entrepreneurship was higher where there was:
 - (a) a reduced national emphasis in manufacturing
 - (b) less intrusive government regulations
 - (c) a higher prevalence of informal investors
 - (d) a significant level of respect for entrepreneurial activity.

Necessity entrepreneurship was higher in countries where:

- (a) economic development was relatively low
- (b) the economy was less dependent on international trade
- (c) there was not an extensive social welfare system
- (d) women were less empowered in the economy.

These factors may account for the lower rate of opportunity entrepreneurship within Wales.

Whilst there are some significant differences amongst the various countries in terms of entrepreneurial activity, it is nevertheless important to note that a series of key policy principles emerge from the overall global GEM study which have applicability to regions such as Wales as well as larger nations such as the USA:

- **Emphasize economic adaptation as a collective responsibility.** Governments at all levels can promote the view that all citizens share responsibility for change in the economic system. The greater the proportion of economic activity conducted in the private sector, the greater the potential for entrepreneurial activity. **This is a particular challenge for the Welsh Assembly Government, because of the recently published research that demonstrates that Wales has the highest rate of economic inactivity of any UK region.**
- **Enhance education. General and entrepreneurship-specific.** A strong commitment to education, both general and entrepreneurship-specific, is clearly justified across all national contexts. Not only are those with limited education less likely to participate in entrepreneurial initiatives, they tend to match their business aspirations

to their level of skills and knowledge. As a consequence, they generally emphasize less ambitious business activities. In Wales, there is an increasing emphasis on improving education and to make the nation a 'learning country' that could make a significant difference to its long-term economic future. The increasing evidence of a strong relationship between entrepreneurial activity and educational attainment could benefit Wales if significant resources are provided to support education at all levels.

- **Lessen the regulatory burden on new and small firms** - The GEM 2001 assessment clearly identified government regulatory burdens as a major deterrent to higher levels of entrepreneurial activity. Governments should ensure that every aspect of their national economic system is supportive of entrepreneurship, including reducing and simplifying the regulatory burden, minimizing taxation and lowering non-wage labour costs. **The Welsh Assembly Government does not have the legislative authority to directly influence such decisions although in terms of burdens such as business rates, the Assembly could, if so inclined, provide a positive stimulus to small firms in Wales.**
- **Strike a balance between economic security and self-sufficiency** - GEM 2001 revealed a strong negative association between the level and duration of unemployment benefits and the prevalence of necessity entrepreneurship. National policy should strive to balance the need to protect the unemployed with the need to encourage higher levels of individual self-sufficiency. **Again, whilst the Welsh Assembly Government cannot directly influence national UK policy, it could propose imaginative ways of encouraging entrepreneurship amongst the unemployed in a region which has, traditionally, had a higher rate of unemployment and economic inactivity than the UK average.**
- **Facilitate greater levels of female participation.** Women participate in entrepreneurship at about one-half the rate of men across all GEM 2001 countries. There is perhaps no greater initiative a country can take to accelerate its pace of entrepreneurial activity than to encourage more of its women to participate. **In Wales, Chwarae Teg are currently taking the initiative in this area although the main challenge, as with equal opportunities as a whole, is to make entrepreneurship a mainstream economic activity.**
- **Compensate for gaps in the population age structure.** Across the 29 GEM 2001 countries, participation of adults in entrepreneurship is highest between the ages of 25 and 44. Countries with a relative shortage of these mid-career adults or a projected decline in adults in this age range, particularly males, should explore ways to encourage their older citizens to become more active in entrepreneurial efforts. **Prime Cymru have demonstrated that, given the proper support, the over 50s in Wales can make a significant contribution to entrepreneurial activity.**
- **Encourage tolerance of diversity in personal income and wealth.** GEM has indicated that greater diversity in household and personal income is consistently associated with higher levels of entrepreneurial activity. As long as this diversity reflects appropriate contributions to national economic growth, governments should ensure that policies reflect a recognition and acceptance of diversity in wealth.

GEM IN WALES

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

- present the GEM 2001 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

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 GEM MEASURES OF ENTREPRENEURIAL ACTIVITY

This is the second year that Wales has participated in GEM and one of the primary outputs of the research 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.

For the purposes of collecting reliable data and ensuring comparability over time, 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 that is currently active in running a new business - the new firms prevalence rate - and **define new as businesses that 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.

In conducting the research this year, the co-ordinators at London Business School discovered that there had been a problem (for 2001 and 2000) in many other countries with classifying individuals as being actively involved with the start-up process. This manifested itself as large numbers of people answering 'don't know' or 'refused' and the proportion of 'don't knows' varied widely across countries. To produce a standard and comparable index of entrepreneurial activity, the co-ordinators estimated the proportion of 'don't knows' that might be considered to be classed as new or nascent entrepreneurs and adjusted the index accordingly.¹

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.

New to GEM 2001 is an examination of the primary motivations behind an individual's decision to engage in entrepreneurial activity. In particular we have constructed two new measures that highlight whether the activity was based on 'opportunity' or was born of 'necessity'.

The **Opportunity Entrepreneurship** prevalence rate was calculated as the proportion of respondents who were classified as nascent entrepreneurs and indicated that they were attempting to start the new business in order to pursue a new business opportunity.

¹ 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

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. The data to compile these proportions arises from new and more detailed follow-up questions asked of those people who could be classified as nascent entrepreneurs.

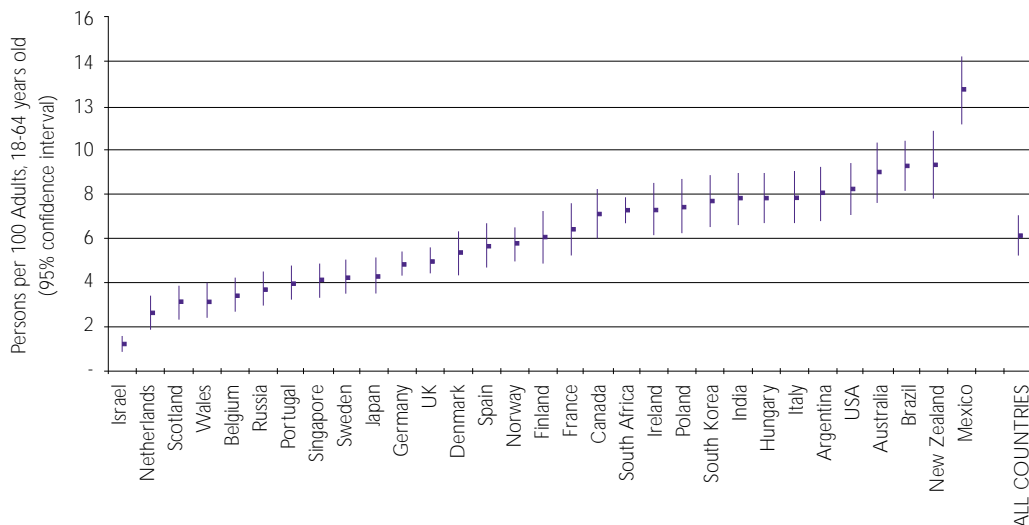
BUSINESS START-UP ACTIVITY

START-UPS

In pure percentage terms, Wales appears to have improved its performance in start-up activity slightly over the past year.

As Figure 1 illustrates, Wales has 3.1 per cent of the adult population engaged in the first processes of entrepreneurial activity at the time of the survey. This gives a ranking of 28th out of the 31 countries taking part in GEM this year. Whilst this is still low, it is an improvement on the 1 per cent recorded in 2000 and is now the same rate as Scotland.

Figure 1 Business Start Up (Nascent) Prevalence Rate by Country



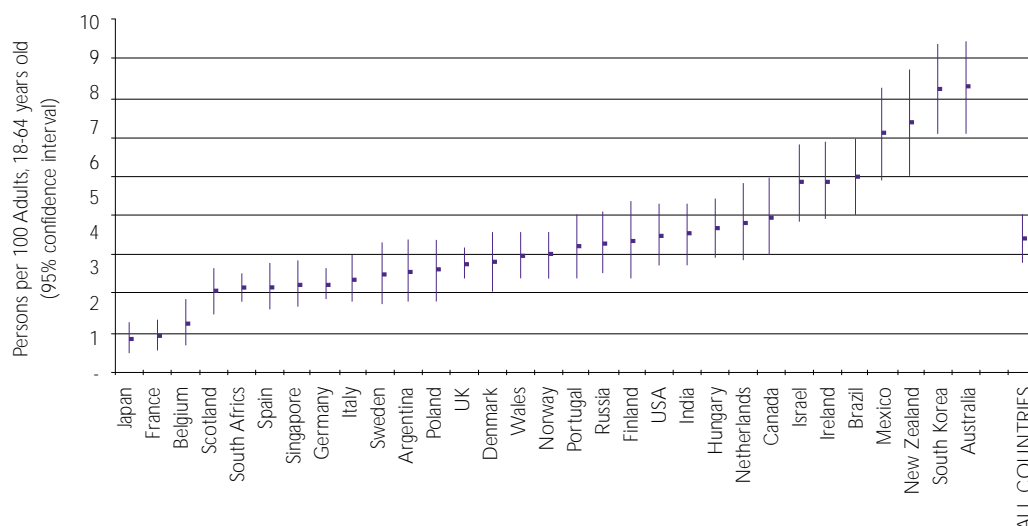
The countries with the highest rate of nascent entrepreneurship are Mexico (12.7 per cent), New Zealand (9.3 per cent), Brazil (9.2 per cent) and Australia (8.9 per cent). The United States had a rate of 8.2 per cent in 2001, compared to 9.8 per cent in 2000. All of these countries have a start-up rate of nascent entrepreneurship that is statistically significantly above that in Wales. Indeed, this is the case for all countries ranked above and including Germany in Figure 1.

NEW FIRMS

The new firm prevalence rates for the 31 GEM nations are shown in Figure 2. Wales ranks 17th with 2.9 per cent of the adult population engaged in running firms less than 42 months old. Japan remains at the bottom of the table in the same position as 2000.

Interestingly, Ireland is now ranked 6th, perhaps correcting the anomalous finding in 2000 where it was ranked next to Japan. The countries with the highest rate of new firm activity are Australia (7.2 per cent), South Korea (7.1 per cent), New Zealand (6.3 per cent) and Mexico (6.1 per cent).

Figure 2 New Business Prevalence Rate (Up to 42 months old) by Country



Wales ranks higher than either Scotland (28th) or the UK as a whole (19th), although the difference may not be significant. We would argue that whilst the 2.9 per cent is very low in comparison to the leading nations, it does place Wales squarely in the average for Europe and that this is the context that may be appropriate for policy analysis. In other words, what is different between the 'European experience', be that in cultural or policy orientated fields, and conditions prevailing elsewhere in countries such as New Zealand, Mexico and Australia where 'conditions' are presumably conducive to generating more new firms.

Comparing Figures 1 and 2 shows that the start-up rate for Wales is higher than that for new firms. This pattern is expected and common to almost all of the 31 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 come to full fruition.

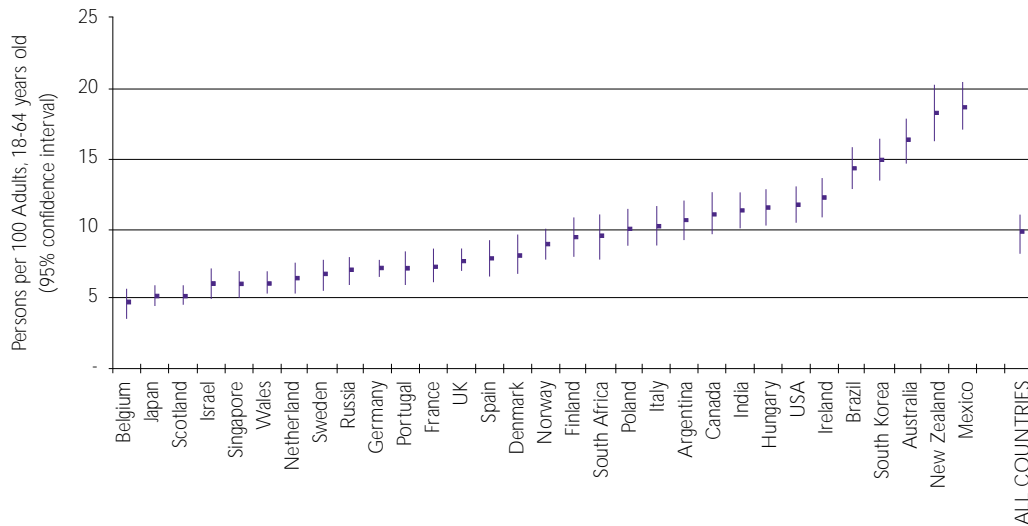
TOTAL ENTREPRENEURIAL ACTIVITY

The main findings for the purposes of ranking and comparison of the GEM research are presented in Figure 3. This shows the Total Entrepreneurial Activity (TEA) score, being the sum of the nascent and the new firms prevalence rates. In 2001 Wales had a TEA score of 6 per cent, up from 3.7 per cent in 2000. In other words, 6 people in every 100 aged 18-64yrs in Wales are actively involved in starting or running a new firm.

Wales ranks 26th out of the total group of 31 GEM nations - above Scotland, which has a TEA score of 5.1 and ranks 29th, but below the UK, which has a TEA score of 7.7 and ranks 19th.

These Figures are, of course, statistical approximations and so strictly speaking could vary within a 'confidence interval.' The lines drawn from each point in the Figure 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. Ironically this means that Wales could be ranked as low as 31st, but we know it is highly unlikely to be ranked above Norway in 16th place.

Figure 3 TEA 2001 - Total Entrepreneurial Activity Prevalence Rate by Country

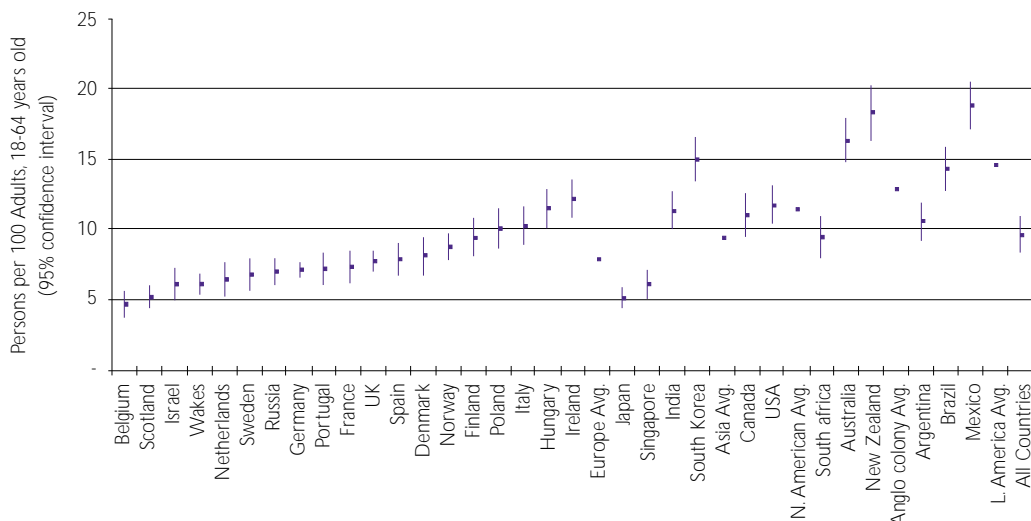


The most entrepreneurial nations in GEM 2001 were Mexico (18.7), New Zealand (18.2), Australia (16.2) and South Korea (14.9). The United States had a TEA score of 11.7, approximately twice that of Wales. The bottom countries were Belgium (4.6) and Japan (5.1).

Figure 4 shows the TEA scores for the nations rearranged into geographical regions - Europe (plus Israel), Asia, North America, Southern Hemisphere (English speaking) and Latin America. For Europe the average TEA score is about 8, indicating again that Wales lags behind, but not by that great a margin since the 95 per cent confidence interval for Wales indicates that the score could be as high as 6.8. What is interesting, however, is that the average scores for the other global regions are rather higher. For Asia it is approximately 9, for North America 11.3, for Southern Hemisphere 14 and for Latin America 14.5 per cent. In the Southern Hemisphere especially, there is a major difference between the 'developing' country of South Africa and the 'developed' countries of Australia and New Zealand.

It is also worthy of note that 23 of the 31 nations that took part in the 2001 study were also present in 2000. For 19 of these, including Wales, there was no statistically significant difference in the TEA scores over the two years. Brazil, Norway and the United States saw a significant fall in the level of entrepreneurial activity - a story certainly consistent in the case of the US with a general sense of 'recession to come'.

Figure 4 TEA 2001 - Total Entrepreneurial Activity Prevalence Rate: Country by Region

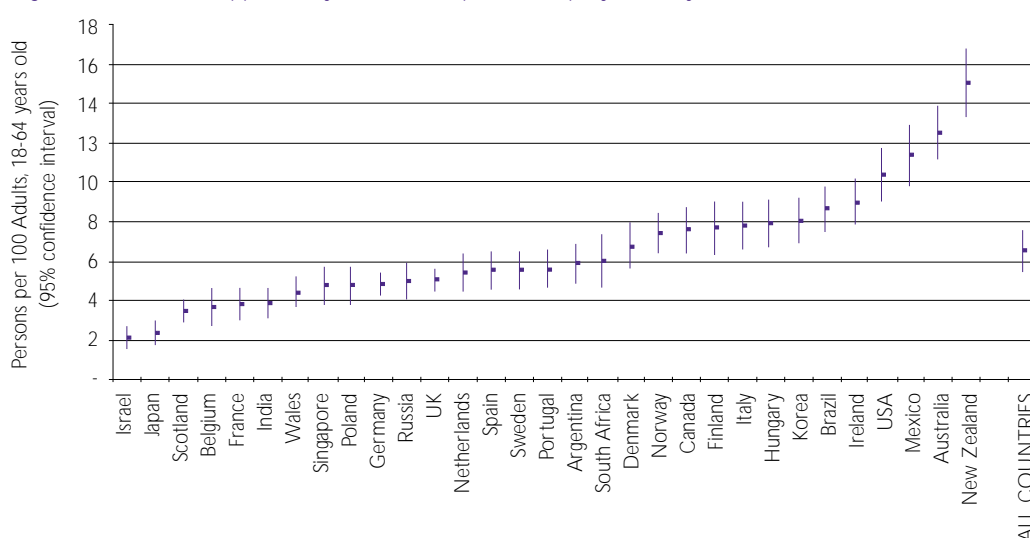


OPPORTUNITY AND NECESSITY ENTREPRENEURSHIP

As mentioned in the introduction, these measures of entrepreneurial activity are new to GEM 2001. The response data is generated from answers to the follow-up question "Are you involved in this start-up to take advantage of a business opportunity or because you have no better choices for work?"

Figure 5 shows prevalence rates of opportunity-based entrepreneurship for the 31 nations; Wales has a rate of 4.4 per cent. This rate compares to 3.4 per cent in Scotland and 5 per cent in the UK. Across the whole research team, the prevalence rates vary from 2 per cent in Israel up to 15 per cent in New Zealand, with an average of about 6.5 per cent. This range of prevalence rates represents more than a six-fold difference. Approximately 54 per cent of nascent 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 25th out of the 31 nations.

Figure 5 TEA 2001 Opportunity-Based entrepreneurship by country



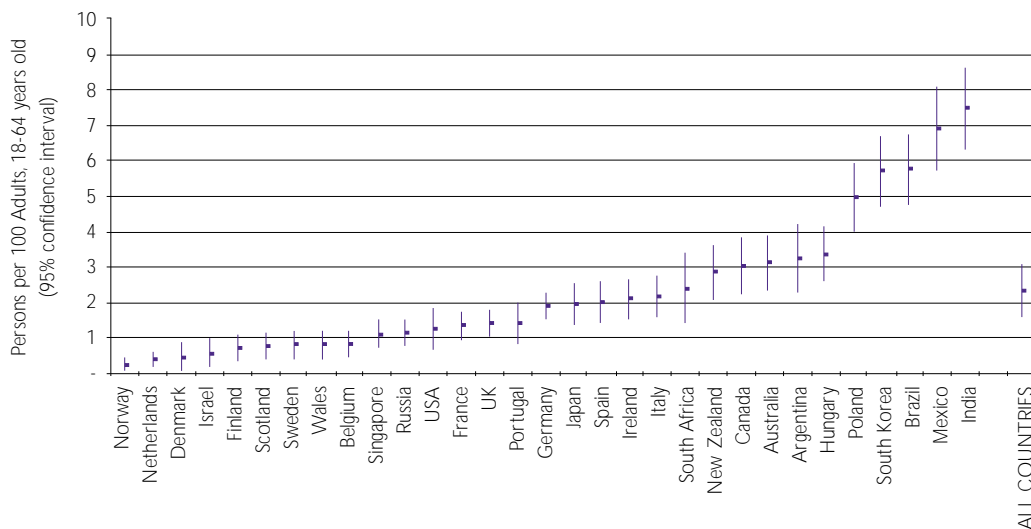
Necessity-driven start-up activity by nation is shown in Figure 6. Here the range of prevalence rates is even broader with Norway having 0.3 per cent of entrepreneurs indicating that necessity had motivated their choice up to India with 7.5 per cent. It is clear that the higher value end of the table is populated by the developing nations, 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 Scotland, with the UK at 1.4 per cent. However, there is no statistical difference between these two rates. The average for the 31 nations is about 2.5, although this is dragged upwards by the much higher rates in the developing countries.

The GEM 2001 global report² indicates that whilst both the opportunity and necessity based measures are strongly correlated with the main TEA score, the measures are not strongly correlated with themselves. This suggests that the data is picking up quite markedly different causal mechanisms.

² Reynolds, P.D. Camp, S.M., Bygrave, W.D.; Autio, E. and Hay, M. (2001) *Global Entrepreneurship Monitor 2001 Executive Report*, Kauffman Center for Entrepreneurial Leadership, Kansas.

Figure 6 TEA 2001 Necessity-Based entrepreneurship by country



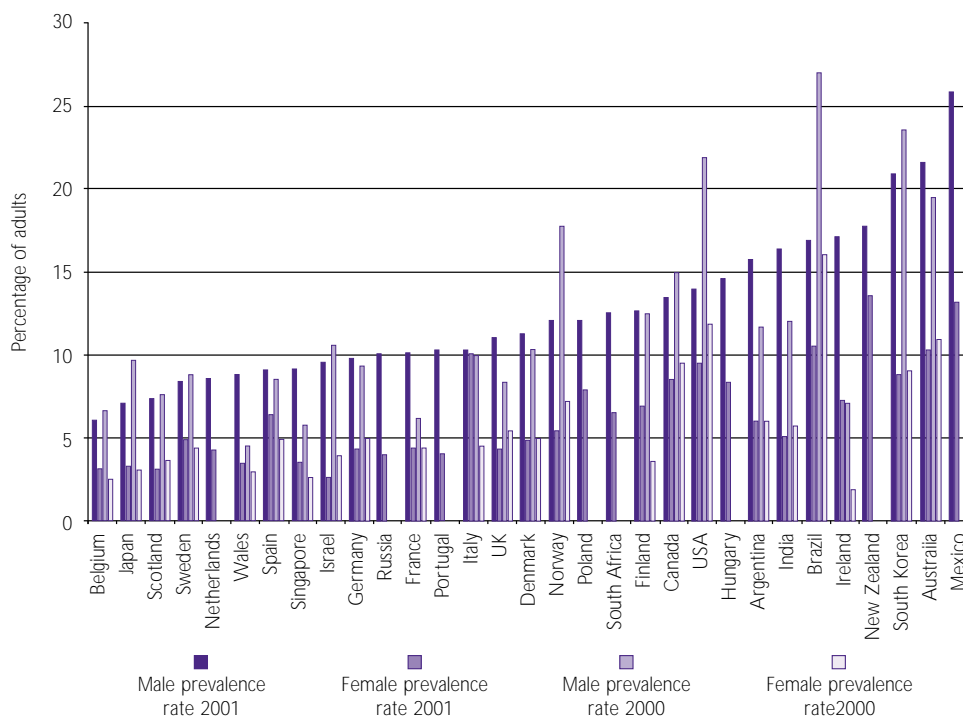
Further evidence from an examination of the main sectors in which start-ups take place suggests that a large proportion of the opportunity-based new firms are in the business services sector. On the other hand, a high number of necessity based new firms are established in the consumer-oriented sector - including retail, restaurants and consumer services. These findings suggest that those forced to establish new firms out of necessity do so in markets that are easy to enter and require few skills, whilst opportunity start-ups are in more difficult to enter sectors, but offer the potential for a higher return. In addition, GEM 2001 shows that opportunity entrepreneurs are, in general, educated to a higher level than those driven by necessity and are far more ambitious in terms of company growth and plans for the future.

ENTREPRENEURSHIP AND GENDER

GEM 2001 has shown a change in the gender balance of Welsh entrepreneurial activity to that found in 2000. In GEM 2000, 60 per cent of those involved in entrepreneurial activity were male, compared to 40 per cent female. As Figure 7 shows, the figures for 2001 are now 71.5 per cent male and 28.5 per cent female. The TEA index for men is 8.8 and for women it is 3.5.

In broad terms this means that 8.8 per cent of males in Wales are currently engaged in entrepreneurial activity, compared to 3.5 per cent of females. Men are therefore roughly two and half times as likely to be an entrepreneur than is a woman. The disparity between the genders means that specific policies directed towards female entrepreneurship may well be justified because the fact that so few women, relative to men, are active as entrepreneurs goes a long way toward explaining why countries such as Wales have much lower TEA scores, although this differs considerably from last year's GEM study, suggesting that a more longitudinal and detailed analysis may be required. In some countries - such as Italy and New Zealand - the ratio is far closer to parity. Indeed, in the US the ratio is 1.5 suggesting that the barriers to entrepreneurship must be far lower there than they are in nations like Wales.

Figure 7 Total Entrepreneurial Activity by Country by Gender



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. With the continuation of the Xenos business angel network under Finance Wales there is certainly recognition of the importance of this type of funding.

However, the findings of GEM 2001 are particularly stark for Wales. From the total adult population survey database, only 4 individuals 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). All gave money to close relatives, but did not disclose the amounts. Two of these investors were female aged between 45-54yrs who invested in a hairdressing salon and the rental of a piece of land. The other two were male, aged 55-64yrs, who invested in a vehicle sales operation and a garage repair workshop.

These findings place Wales squarely at the bottom of the world league table with an informal investment prevalence rate of 0.2 per cent. Both Scotland and the UK have rates above 2 per cent and the top nations include the US (5.7 per cent) and New Zealand (6.8 per cent).

Whilst we acknowledge that there are quite large margins of error associated with these measures, Wales' is clearly very low and this should be a major cause for concern. With economic policy so geared towards creating a more entrepreneurial culture and environment, the GEM global report highlights a statistically significant link between informal investment and entrepreneurial activity.

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 2001.

Table 1 Wales' Entrepreneurial Activity Scorecard

Entrepreneurial Activity Indicators	Wales		All GEM Countries		
	Rank	Score	Median	High (Score)	Low (Score)
Start-ups overall	28th	3.1%	6.1%	12.7% (MX)	1.2% (IS)
Independent start ups	28th	1.2%	3.8%	11.2 % (MX)	0.8% (FR)
Company-sponsored start-ups	=30th	0.1%	1.2%	3.7% (MX)	0.1% (WA/FR)
Opportunity entrepreneurship	25th	4.4%	6.5%	15% (NZ)	2% (IS)
Nascent entrepreneurship	24th	0.8%	2.5%	7.5% (IN)	0.3% (NR)
Total Entrepreneurial Activity	26th	6%	9.5%	18.7% (BR)	4.6% (BE)
Female to male participation in entrepreneurship	20th	40%	51%	97% (IT)	28% (IS)
Participation of population as business angels in last 3 years	31st	0.2%	3%	7% (NZ)	0.2% (WA)

Country codes:

MX - Mexico

IS- Israel

FR- France

WA - Wales

NZ - New Zealand

NR- Norway

IN - India

BE - Belgium

IT - Italy

ENTREPRENEURIAL FRAMEWORK CONDITIONS IN WALES

The GEM theoretical model 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). These 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 a 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 entrepreneurial framework conditions affecting new and growing firms in Wales, drawing on various findings from the interviews with the key informants, including qualitative data from the in-depth interviews and quantitative data from the detailed responses³. This year's analysis will compare the key informant interview results with those from 2001 to see if there has been any overall change in attitude regarding entrepreneurship in Wales. We will also compare Wales with results obtained from other GEM nations in the study to gain an overall understanding of where Wales stands relative to our international competitors.

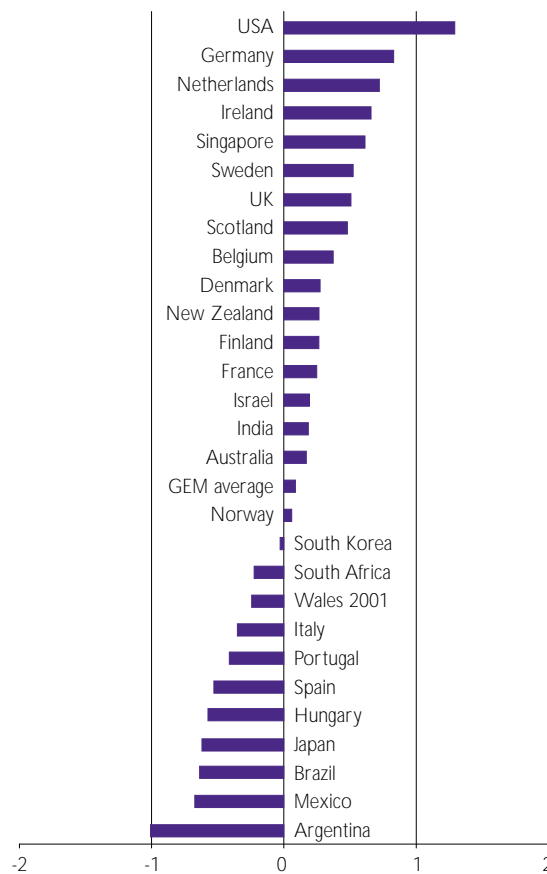
³ As with last year's study, respondents were asked to rate their responses to the statements put before them on a scale of 1 (completely false) to 5 (completely true). For the purposes of comparing Wales to the other GEM nations graphically, the results have been converted to a scale of +2 to -2 so that 3 (neither true nor false) is represented as 0. We have done this for ease of visual analysis, as the negative and positive answers can be distinguished more easily.

FRAMEWORK CONDITION NO 1

FINANCIAL SUPPORT

- Overall, the key respondents' perception of the availability of finance within Wales had decreased since the GEM 2000 report, and is well below the GEM average for the global research study (Figure 8). The countries seen to have the best financial support for entrepreneurs were the USA, Germany, Netherlands and Ireland, whilst the poorest support was found in Argentina, Mexico and Brazil.
- Whilst Wales performed better in the provision of more traditional sources of finance (grants, loan and equity), it was perceived as being well behind many other advanced countries in terms of the provision of venture capital, business angel participation, and IPOs (Initial Public Offerings).

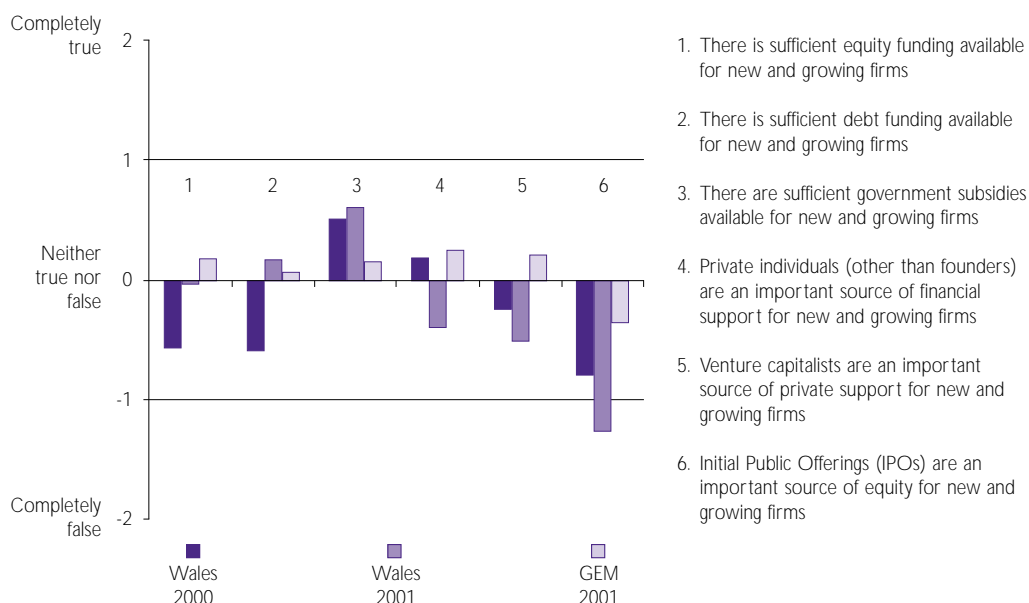
Figure 8 International comparisons GEM 2001 - Financial Support



Loans, equity and public sector support

- Given the launch and increased profile of Finance Wales during 2001, it is not a major revelation to find that the key respondents' perception of the availability of both loan and equity funding has actually increased since last year's study (Figure 9), although it is still well behind that of the UK, Scotland and Ireland. This finding is roughly in line with the Bank of England's report into Finance for Small Firms⁴, which showed that lending to small firms grew during 2001, with little evidence of any significant financial difficulties in the small firm sector.
- Similarly, the large amounts of public funding support now being made available to Welsh SMEs via organisations such as the National Assembly has resulted in a slight increase in the perception of the impact of public sector support in the promotion of firm creation and growth in Wales. This is supported by the recent FSB survey of small businesses, which indicated that government funded Business Support Services were considered more important in Wales than in the majority of other regions/nations of the UK⁵.

Figure 9 Financial Support - National and International Comparisons of expert opinions



Business Angels and Venture capital

- Private investment from individuals such as business angels does not seem to be an important source of financial support for new and growing firms. Whilst last year's study demonstrated a positive view of business angel activity within Wales, the GEM Wales 2001 research indicates that the majority of key respondents did not consider business angels to be an important source of funding for private firms. This supports the finding from the adult population survey, which indicated that Wales had the lowest rate of individual private investment of any of the GEM nations.
- Similarly, whilst venture capital is seen as an important source of private sector support in the majority of GEM countries, its importance within Wales has decreased even further since last year's low rating, which could be reflected by the absence of any serious venture capital company within the region. This is worrying, given the trend reported by the Bank of England's latest report that there may also be reductions in UK venture capital supplied to businesses, particularly in seed and early stage investment, reducing the possibility of potential investments from other parts of the UK.
- These findings are supported by the most recent report on investment activity in the UK, undertaken by the British Venture Capital Association⁴, which showed that Wales had the largest drop in private equity investment activity of any UK region (down 79 per cent from 1999), with 20 companies receiving £48 million in the year 2000.
- Indeed, if the number of VAT registered businesses is compared with private equity investment activity to give an indication of the level of investment expected within a region, Wales has the lowest number of registered businesses receiving private equity at 27 in 100,000 as compared to 71 businesses for the UK and 105 businesses in Scotland. Indeed, this difference is partly explained by the lack of a 'tightly-knit' financial community in Wales, where private equity as a type of finance is well understood. This poses a major challenge to Finance Wales in developing a capacity to provide 'equity education' to persuade Welsh entrepreneurs of the benefits of raising private equity and attracting outside investors.

⁴ Bank of England (2002) Finance for Small Firms - a ninth report, bank of England Domestic Finance Division, April 2002

⁵ Federation of Small Businesses (2002)

⁶ BVCA (2001) 2000 Report on Investment Activity

IPOs

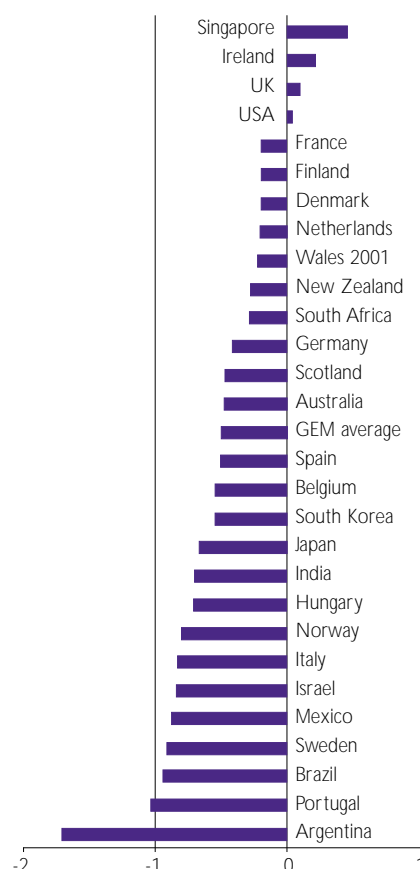
- The IPO (Initial Public Offering) provides a fresh source of capital critical to the expansion of businesses and reflects vitality of the growth business sector of any region or country. Within the UK, there are nearly 2,500 UK firms currently trading on either the London Stock Exchange or AIM (the Alternative Investment Market), although the 21 Welsh floated companies make up less than 1 per cent of this total. In contrast, there are over 170 companies from Scotland that are traded on either the main market or AIM.
- In terms of IPO activity, only two new Welsh companies - the PHS Group and Transport Systems PLC - were floated onto either AIM or the Stock Exchange in 2001. Given these facts, it is therefore not surprising that IPOs are perceived as a relatively unimportant source of equity for new and growing firms within Wales, with only Spain, Argentina and Brazil rating lower than Wales across the GEM participating nations.

FRAMEWORK CONDITION NO 2

GOVERNMENT POLICIES

- The impact of government policy on entrepreneurial activity has been an enduring theme throughout all the previous GEM studies globally. All but four of the GEM nations examined (Singapore, Ireland, UK and USA) indicate dissatisfaction with the role of national and local government in supporting entrepreneurs (Figure 10).
- Despite this, the efforts of the Welsh Assembly Government in encouraging enterprise are rated higher by the Welsh key respondents (at least relative to the majority of the other GEM nations). Indeed, the perception of government support is marginally higher for 2001 than it was during the GEM Wales 2000 study.

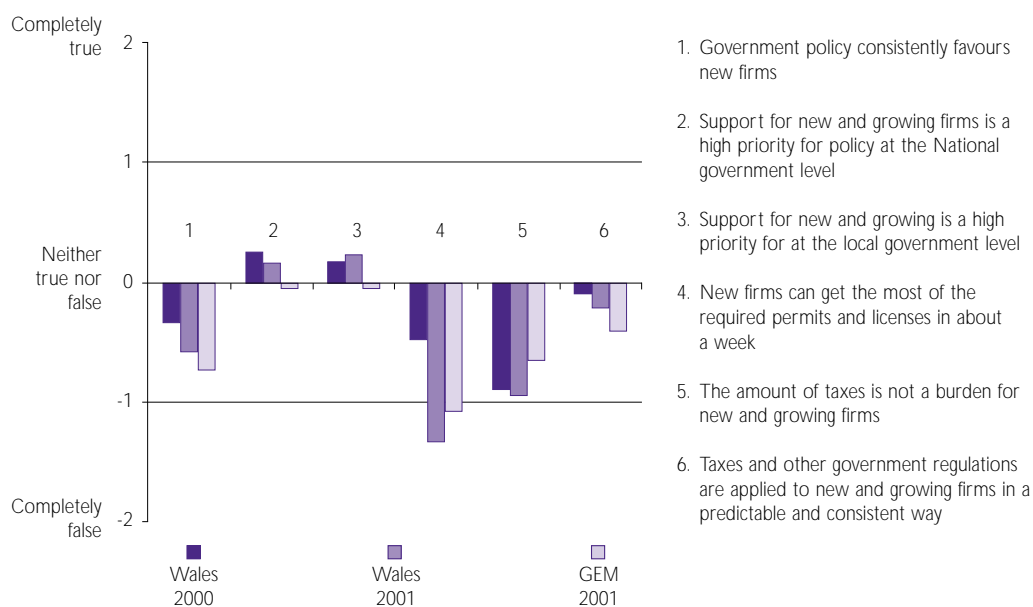
Figure 10 International comparisons GEM 2001 - Government policies



National and Local Government Policy

- It is the opinion of the key respondents that current government policy has yet to consistently favour new firms, although this is a significant improvement on the results from last year. Only the governments of the USA, South Africa, Belgium, Singapore and the UK were found to be doing better.
- However, it was felt that there had been a significant improvement in the National Assembly's priority in policy towards new and growing firms since last year's study (Figure 11). This is not surprising given the development of the National Economic Development Strategy for Wales⁷, launched by the Welsh Assembly Government at the end of 2001. This confirmed the commitment of the National Assembly to encouraging entrepreneurship in Wales through "improving the climate for enterprise, offering better support for new and growing businesses and by making (the) school and college education system more oriented to teamwork, project work, creativity and business venturing".
- Whilst respondents in 2000 had been more positive about local government's prioritising of support for new and growing business (as compared to that of the National Assembly), the situation in 2001 was reversed. This is again surprising, given the large amounts of funding that local authorities have provided, particularly in Objective 1 areas⁸, towards enterprise development.

Figure 11 Government Policy - Comparisons of expert opinions Wales 2000 & 2001



Taxation and permits

- There appears to be only a slight concern, which has decreased considerably since last year's study, regarding the time taken by entrepreneurs in obtaining the required paper work to establish and develop a business.
- Taxation, whilst not being within the legislative remit of the National Assembly for Wales, is still seen as a major burden for small businesses in Wales, and is perceived to be a more significant problem than in the majority of other GEM nations. Interestingly, there is little difference with the expectation in Scotland, where the Scottish Parliament has primary legislative power, although in the UK, there is the perception that taxation is becoming less of a burden on SMEs.

⁷ National Assembly for Wales (2001) A Winning Wales - the National Economic Development Strategy of the Welsh Assembly Government, National Assembly for Wales, Cardiff

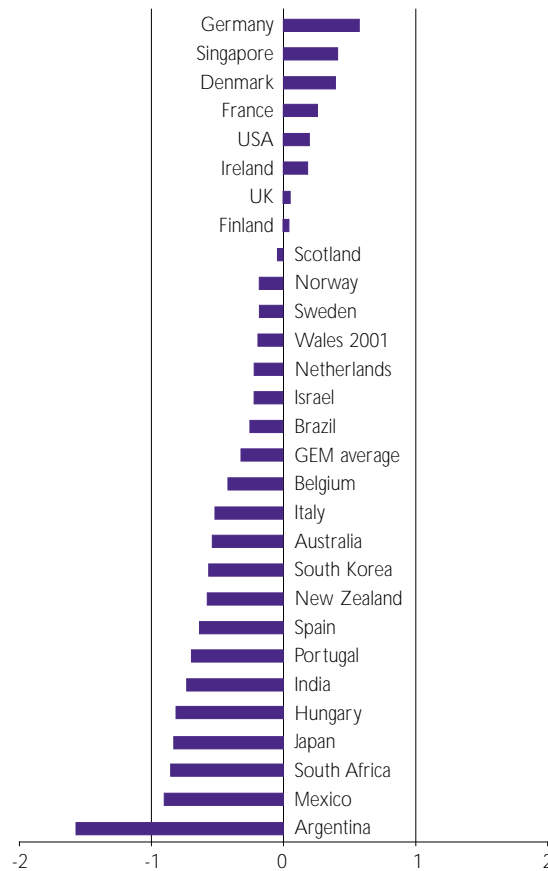
⁸ The most recent figures from the Welsh European Funding Office indicate that local authorities within the Objective 1 region of Wales have received over £5.5 million (under Priority 1 Measure 1) to provide direct grant support for new and growing businesses

FRAMEWORK CONDITION NO 3

GOVERNMENT PROGRAMMES

- With regard to the usefulness of government programmes towards new and growing businesses, Wales was placed higher than the GEM average, although below both the UK and Scotland (Figure 12). Indeed, overall there was general dissatisfaction with government programmes geared towards small firms with only eight of the nations surveyed - Germany, Singapore, Denmark, France, USA, Ireland, UK and Finland - being positive towards government programmes for SMEs.
- This result for Wales again reflects the findings of the FSB survey which found that Welsh FSB members expressed the highest levels of dissatisfaction of all the areas in the UK regarding government funded support measures such as usefulness of business advice, quality of business advisors, advisor's understanding of their businesses, loan funding and relevance of their services.

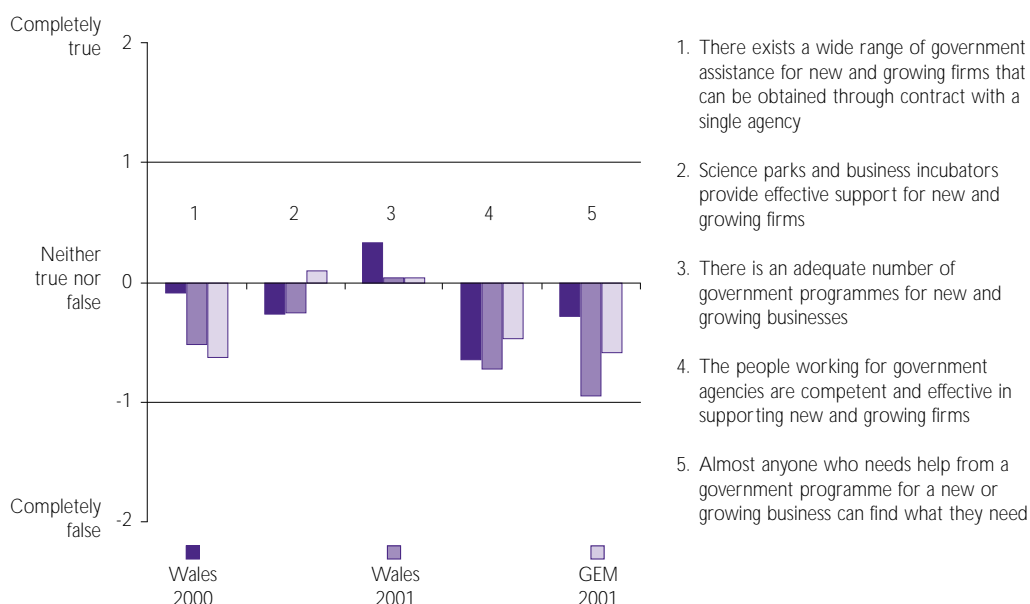
Figure 12 International comparisons - Government programme



- Unlike last year's study, there is a stronger belief that a wide range of government assistance for new and growing firms can be achieved through contact with a single agency (Figure 13). Internationally, only Singapore, Germany and Denmark were rated higher than Wales under this heading. This is not surprising, given that Business Connect had begun to establish itself as the gateway to business support in Wales and which has worked hard as a network to achieve this belief amongst Welsh businesses. However, with the demise of Business Connect on April 1st of this year, it will be interesting to see if the WDA's new responsibilities for business support will be seen in the same light when the survey is repeated next year.

- Given the results of the business support review of last year - which showed that Wales had 55 public sector agencies spending an estimated £150 million on business support - it is not surprising that there is a considerable growth in perception that Wales has a more than adequate number of programmes for new and growing businesses. Clearly, one of the major concerns is not the number of programmes but the quality of the people delivering them. Yet again this year, the key respondents do not agree with the view that the people working within government agencies in Wales are competent and effective in supporting new firms.
- Finally, the launch of the Technium programme by the WDA last year was aimed at developing a new breed of business incubators linking universities and industry in Wales. However, the perception still remains amongst the key informants in Wales that these developments do not, as yet, provide effective support for new and growing businesses.

Figure 13 Government Programmes - Comparisons of expert opinions Wales 2000 & 2001

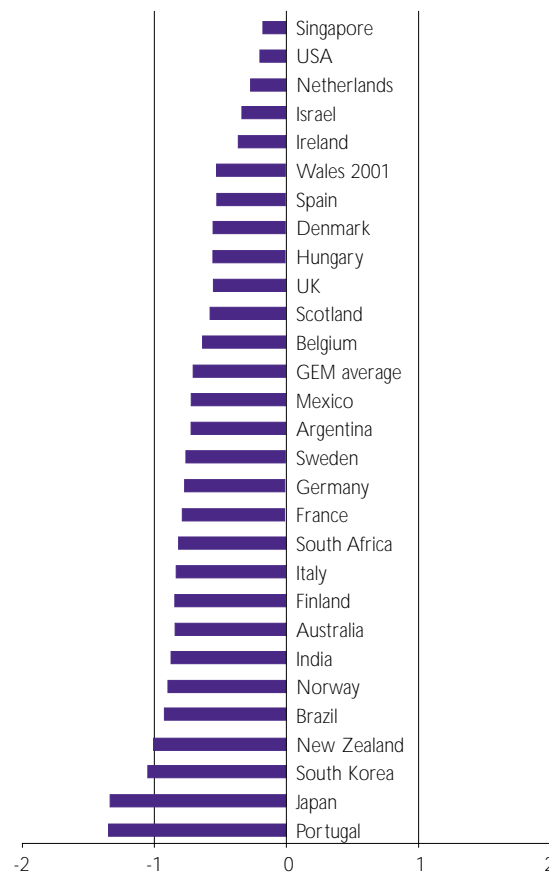


FRAMEWORK CONDITION NO 4

EDUCATION AND TRAINING

- The message that comes from key respondents regarding education and training across all GEM nations is that more needs to be done in terms of developing a greater entrepreneurial culture at all primary, secondary and tertiary levels of education. Indeed, not one GEM nation (including the USA) was positive about the relevance of education and training to entrepreneurship (Figure 14).
- In Wales, whilst the picture is as bleak as the other countries, the perception of education and training has improved considerably since the GEM 2000 study and is well above the GEM average, with only the Singapore, USA, Netherlands, Israel and Ireland being rated higher by key respondents.

Figure 14 International comparisons - Education and training



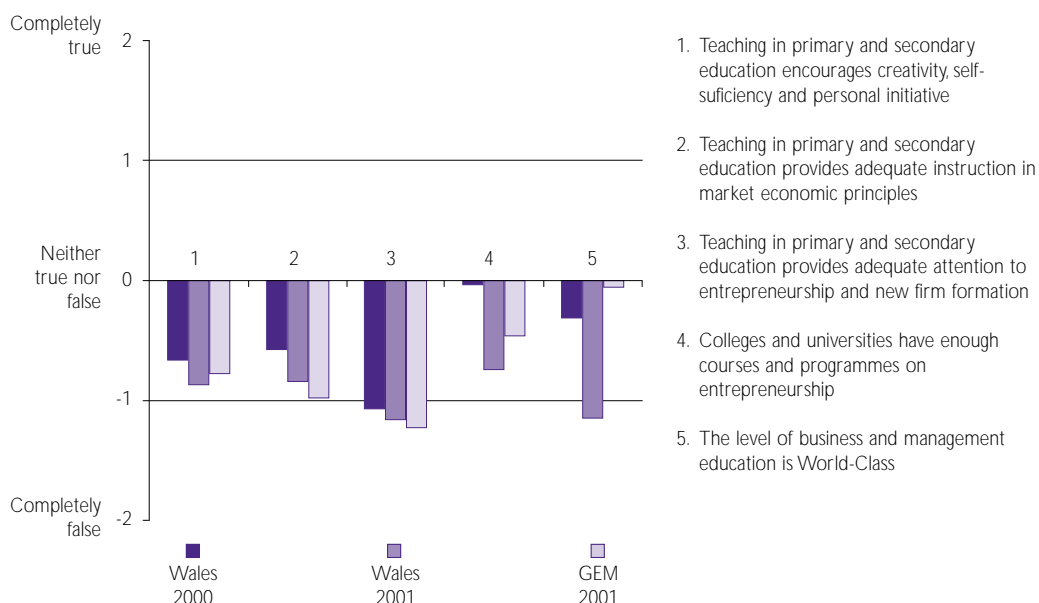
Primary and secondary schools

- The key respondents do not consider that enterprise education is not being taught adequately within Wales, both in the wider context of the economy, as well as more specific with regard to entrepreneurship and new firm formation (Figure 15).
- However, Wales is performing better than last year, which may be due to the increasing emphasis, through the Entrepreneurship Action Plan, on developing enterprise education, although this has yet to be fed into the school system.

University and colleges

- The increased profile of initiatives such as the Knowledge Exploitation Fund's Entrepreneurship champions programme and the Enterprise College at the University of Glamorgan means that respondents are more positive this year regarding the amount of courses and programmes available within the further and higher education programme in Wales. Internationally, only Mexico, Singapore, Mexico and Hungary rated higher in this category.
- With regard to the quality of business schools and management education, which is seen as crucial in developing entrepreneurial businesses, Wales again scored below the GEM average. This is also reflected in the recent Research Assessment Exercise undertaken within the university sector, which saw only two (out of the nine) of the nations' Business Schools, namely Bangor and Cardiff, rated as 5 - i.e. having world class research being undertaken within their institution.

Figure 15 Education and Training - Comparisons of expert opinions Wales 2000 & 2001



FRAMEWORK CONDITION NO 5

RESEARCH AND DEVELOPMENT TRANSFER

- According to the most recent Government Figures on private sector R&D expenditure⁹, the state of R&D in Wales remains relatively unhealthy, with the amount of expenditure on R&D within Welsh businesses decreasing by nearly 30 per cent in the period 1999-2000, as compared to a total rise of 2 per cent in the UK. Indeed, Wales now accounts for only 1.3 per cent of total business R&D undertaken within the UK, as compared to 1.8 per cent in 1999. Only Northern Ireland businesses spent less on R&D in 2000, but these are quickly catching up with Wales, having increased expenditure by nearly 40 per cent in the period 1999-2000.
- A similar picture emerges in the other main provider of R&D in Wales, namely the university sector. This is despite the fact that thirty-five science, engineering and medicine departments at the Universities of Wales Swansea, Bangor and Aberystwyth, along with Cardiff University and the University of Wales College of Medicine (and Computing Science at the University Of Glamorgan), were recognised as having levels of international excellence in their subject areas during the latest research assessment exercise in 2001. This represents an increase of 40 per cent since 1996, with five departments rated at the highest level of 5*.
- However, it may not be the quality of university research that is the issue within Wales but its funding, especially relative to other parts of the UK. As the recent IWA report¹⁰ examining the creation a business culture within universities in Wales indicates, the research capacity of universities in Wales is still extremely low, attracting only 3.7 per cent of external UK research funds compare to 13.2 per cent that goes to Scottish universities.
- The need to increase R&D within universities is highlighted by the recent reviews of HE in Wales^{11,12}, which proposes that the National Assembly, working alongside the universities, should produce an all-Wales strategy that will produce a world class research base, establish centres of excellence and recognise the contribution of applied research.

⁹ National Statistics (2001) Business Enterprise Research and Development 2000, National Statistics Office

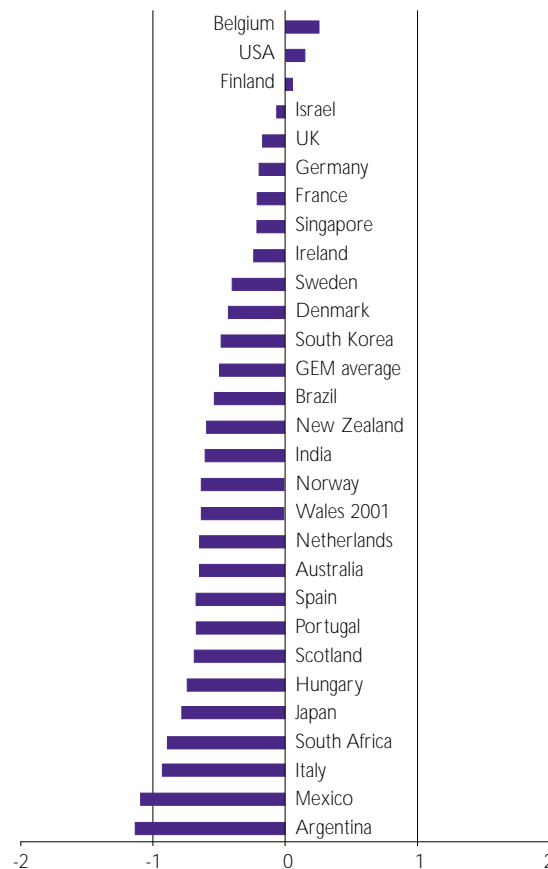
¹⁰ Jones, G. (2002) The Third Mission: Creating a business Culture for Higher Education in Wales, IWA, Cardiff

¹¹ The National Assembly for Wales (2001) Policy Review of HE, Education and Lifelong Learning Committee, National Assembly for Wales, March 2002

¹² Welsh Assembly Government (2002) Reaching Higher: Higher Education and the Learning Country - a strategy for the higher education sector in Wales, National Assembly for Wales, March 2002

- With regard to the GEM study, only Belgium, the USA and Finland believe that they have the necessary R&D infrastructure required for an entrepreneurial economy. All the other GEM nations, including Wales, are fairly negative about their technological transfer capabilities (Figure 16).

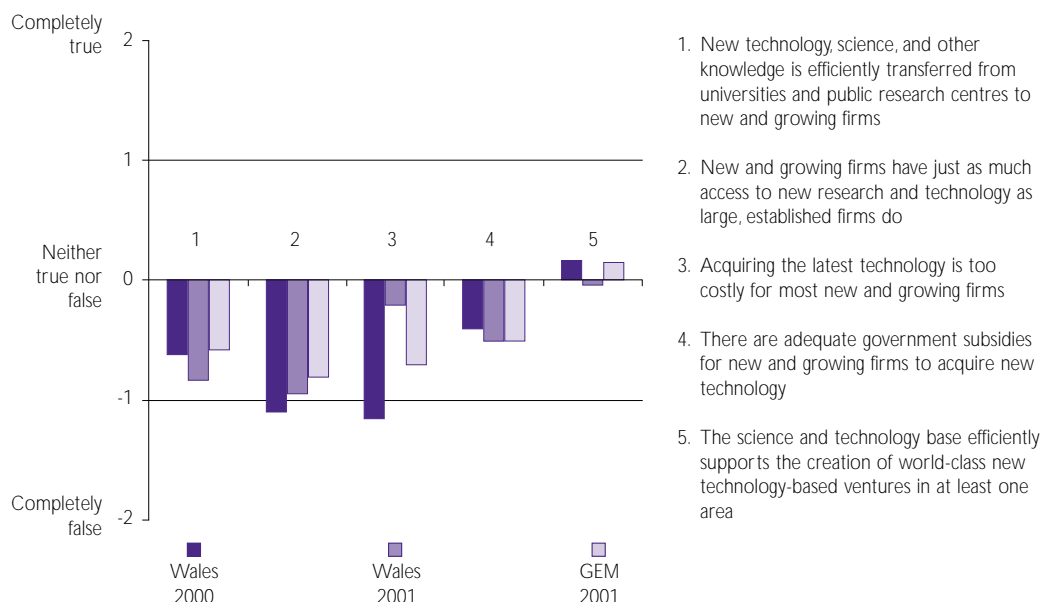
Figure 16 International comparisons - R & D transfer



- The majority of the key respondents from Wales felt that despite a plethora of schemes, including those such as KEF and the Centre of Expertises programme, knowledge transfer from universities to entrepreneurial firms was still largely inefficient (Figure 17). However, the major concerns of the respondents were regarding the access and cost of R&D to new firms, despite financial incentives introduced by the Treasury, such as the increase in tax relief for SMEs from 100 per cent to 150 per cent for all qualifying non-capital R&D expenditure. Indeed, the proposed enhancement, by the Welsh Assembly Government, of the R&D tax credit for Wales would be welcomed, as it is not believed that there are adequate government subsidies for new firms to acquire technology.
- One of the main policy issues highlighted is the fact that most of the programmes currently developed by the Welsh Development Agency and the National Assembly for Wales such as SMART, SPUR and RIS are geared towards the commercialisation of R&D rather than its creation and development. As a result, very little funding is being allocated within either the public or the private sector towards the creation of long term R&D capacity within the region.
- Within the Objective 1 programme for Wales, there has been almost no strategic targeting of the £32million currently committed to the innovation projects on developing the R&D capacity of Wales, with the majority concentrating on exploitation of research rather than addressing the increasing requirements of the nation for better funded R&D within the public and private sectors. As one key informant stated "Expecting the science base to produce more technology transfer in industry without increased investment in core R&D activities is like expecting Wales to produce world class entrepreneurs without serious investment in changing the long term entrepreneurial culture within this nation."

- The one positive sign regarding R&D transfer is the growing belief that we have at least one world-class technology sector supported by the science base in Wales.

Figure 17 Research & Development transfer - Comparisons of expert opinions Wales 2000 & 2001



FRAMEWORK CONDITION NO 6

COMMERCIAL AND PROFESSIONAL INFRASTRUCTURE

- According to the experts, Wales has one of the best commercial and professional infrastructures amongst all the GEM nations for the development of entrepreneurship, with only the USA, Belgium, Israel and Singapore being rated higher (Figure 18).
- Whilst it is considered that there are more than enough subcontractors and consultants in Wales to support new and growing firms, the majority of key respondents see the costs as being too high (Figure 19).
- What is most interesting is that the perception of quality of subcontractors, suppliers and consultants has changed since the 2000 study, becoming far more positive in 2001. Similarly, there has been a considerable increase in the number of key respondents believing that it has become easier for new and growing businesses to get good professional, legal, accounting and banking services (with only the USA professional services being rated higher). This reflects other more recent studies of professional business support in Wales and the UK.^{13,14}
- Indeed, given the low scores attributed to public sector support in Wales, there is clearly an opportunity to involve the private sector more closely in the delivery of services to businesses in Wales.

¹³ Bank of England (2002) Finance for Small Firms - a ninth report, Bank of England Domestic Finance Division, April 2002

¹⁴ Federation of Small Businesses (2002)

Figure 18 International comparisons - Commercial and professional infrastructure

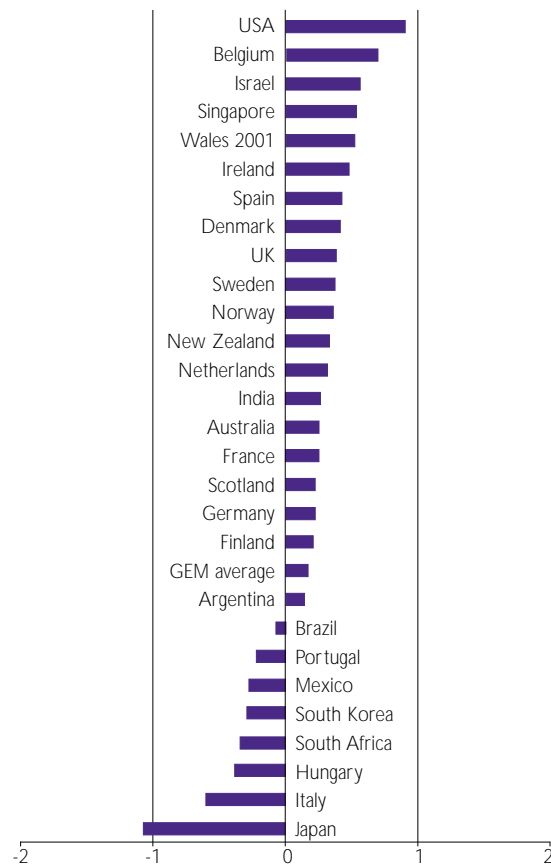
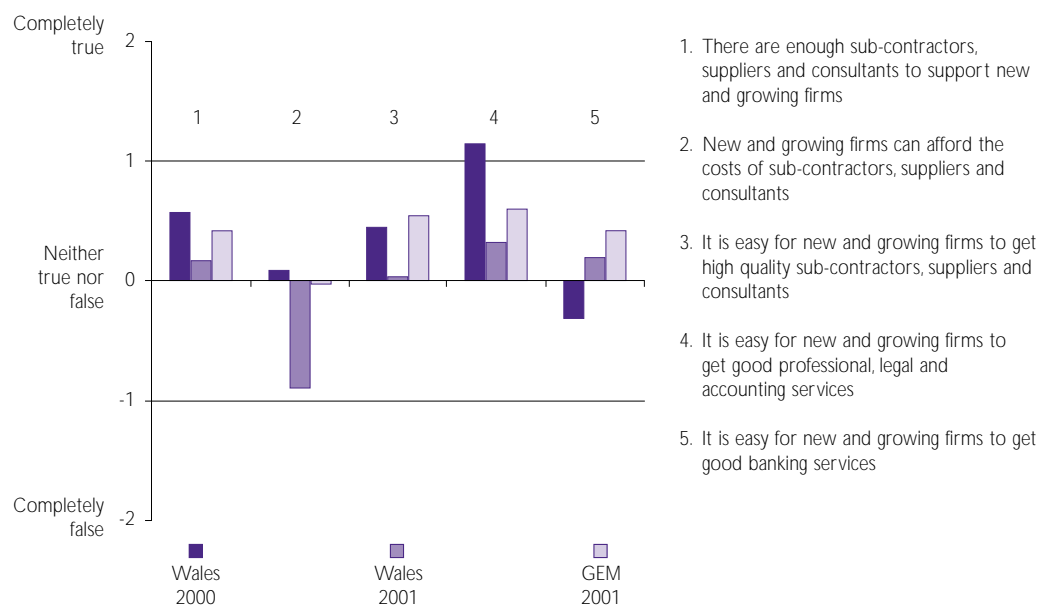


Figure 19 Commercial & Legal infrastructure - Comparisons of expert opinions Wales 2000 & 2001

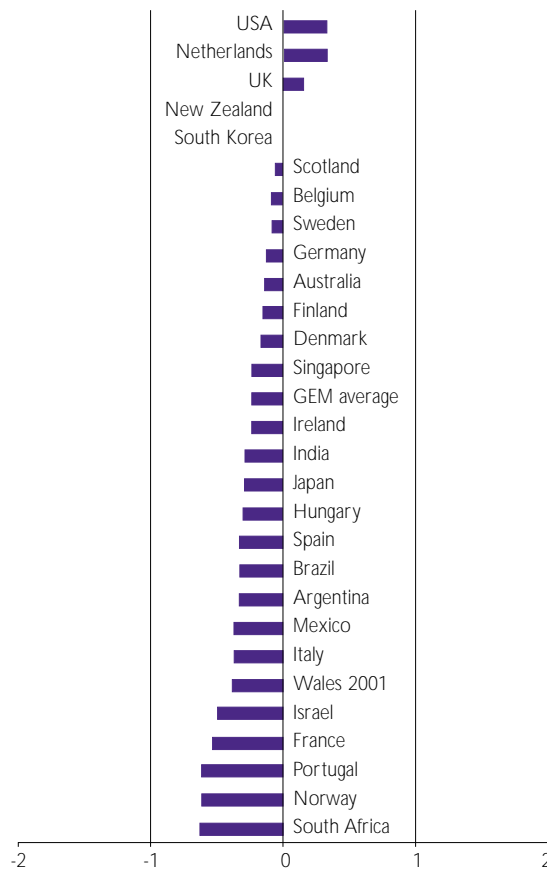


FRAMEWORK CONDITION NO 7

BARRIERS TO ENTRY

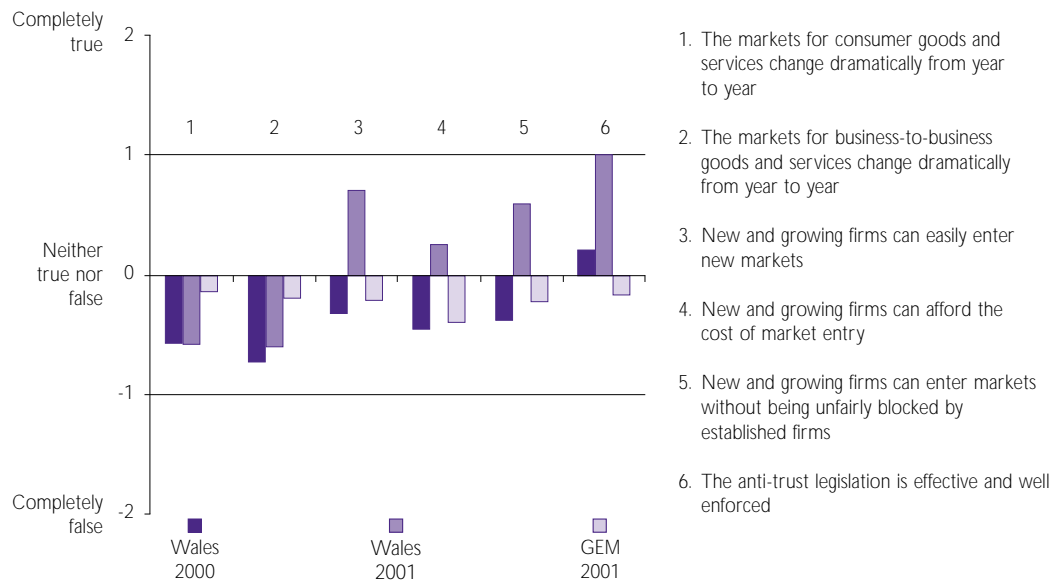
- The barriers to entry framework condition (or the degree of internal market openness) deals with the dynamism of industry within a region, as new firms come in to replace existing businesses. Overall, there are only four countries - USA, Netherlands, UK and New Zealand - where it is perceived that the general enterprise and economic environment is dynamic (Figure 20).
- Wales is perceived to be one of the least dynamic of the GEM regions, reflecting current economic data on the region¹⁵, with markets for consumer and business-to-business goods hardly changing form year to year. However, whilst last year's study indicated that the barriers and costs to entry were relatively low, this year's perception from key respondents is that it is becoming increasingly more difficult to enter new markets within Wales (Figure 21).

Figure 20 International comparisons - Barriers to entry



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

Figure 21 Barriers to entry (internal market openness) - Comparisons of expert opinions Wales 2000 & 2001



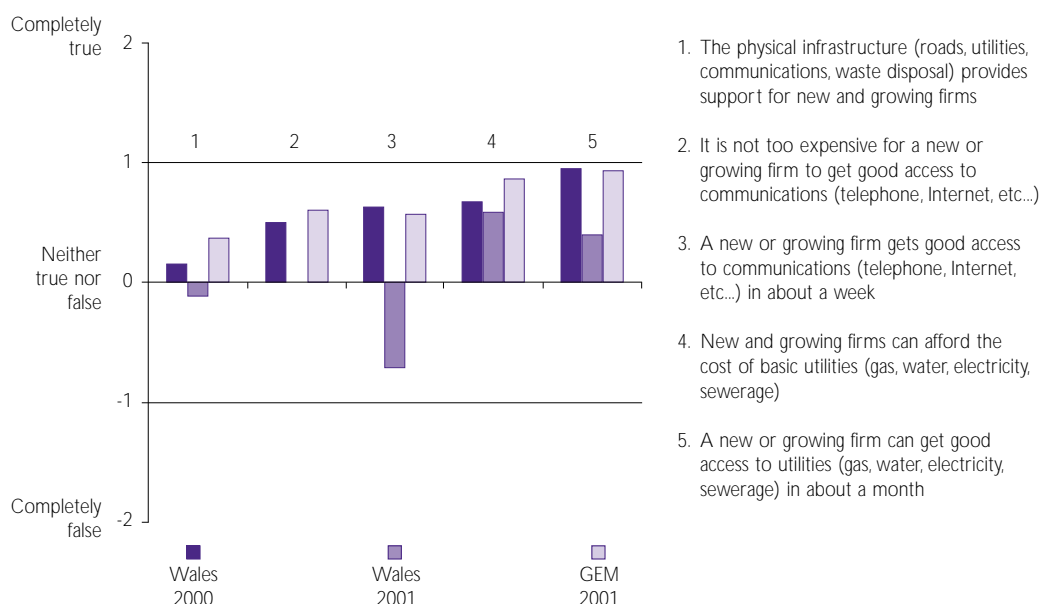
FRAMEWORK CONDITION NO 8

PHYSICAL INFRASTRUCTURE

- According to the study, the physical infrastructure in Wales, at least compared to the majority of the GEM countries, is not as fully supportive of new and growing businesses, at least relative to countries such as the Singapore, USA, Germany, Finland and New Zealand. However, there is broad agreement that the access to, and cost of, both communications and basic utilities is not prohibitive. Indeed, only two nations - Ireland and India - registered dissatisfaction with the general physical infrastructure to support entrepreneurship (Figures 22 and 23).

Figure 22 - International comparisons - Access to physical infrastructure



Figure 23 - Access to physical infrastructure - Comparisons of expert opinions Wales 2000 & 2001

FRAMEWORK CONDITION NO 9

CULTURE AND SOCIAL NORMS

According to the Global GEM 2001 study, cultural and social norms - which includes the value society attributes to entrepreneurship, the image of entrepreneurs in the society, and attitudes towards entrepreneurs - is one of the most important factors that differentiates countries with high levels of entrepreneurial activity (HIGHENT) from those with low levels (LOWENT).

Within HIGHENT nations, encouraging women and minorities to be more entrepreneurial, and creating a mindset of creativity and innovation, are seen as key issues for further development. In LOWENT nations such as Wales, there is a greater need for role models and to instil, within the general population, the elementary aspects of the entrepreneurial mindset. However, across all countries, there is a need to increase respect for entrepreneurs, lower the fear of failure and modify the perception of wealth creation.

We will examine these different issues through drawing on both the data from the key informant interviews for data AND the adult population survey, enabling us to discuss the cultural and social norms that affect entrepreneurship in Wales from the point of view of experts and the general population.

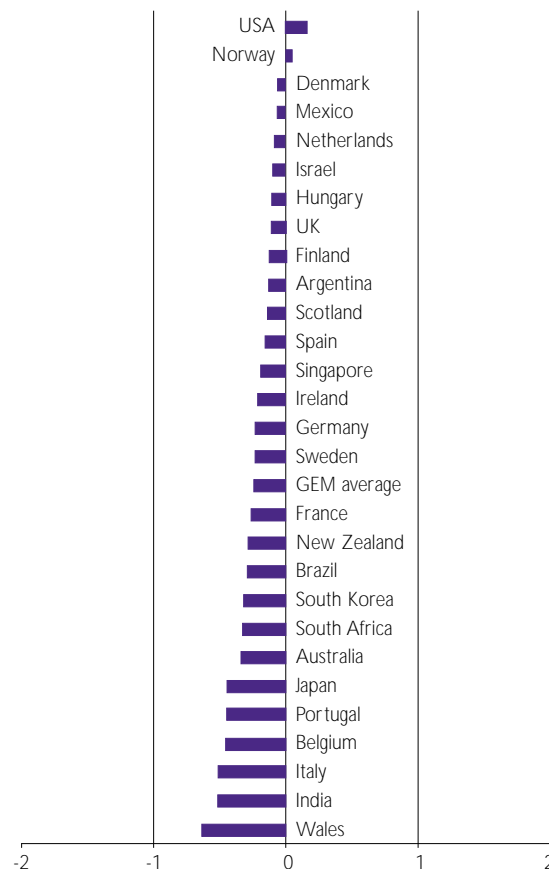
Key informant interviews

Overall, Wales had the lowest score for cultural and social norms of any of the GEM nations, which indicates the major challenges facing initiatives such as the Entrepreneurship Action Plan.

Internationally, only two countries - USA and Spain - have the social and security systems that provide the appropriate encouragement for people to take the initiative and be self-sufficient (Figure 24). Wales is above the GEM average for this measure and, in the opinion of the key respondents, the situation has improved since last year's study (Figure 25).

¹⁶ Jones-Evans, D. (2001) Creating an entrepreneurial Wales, Gregynnog Seminar Series, Vol 3, No1

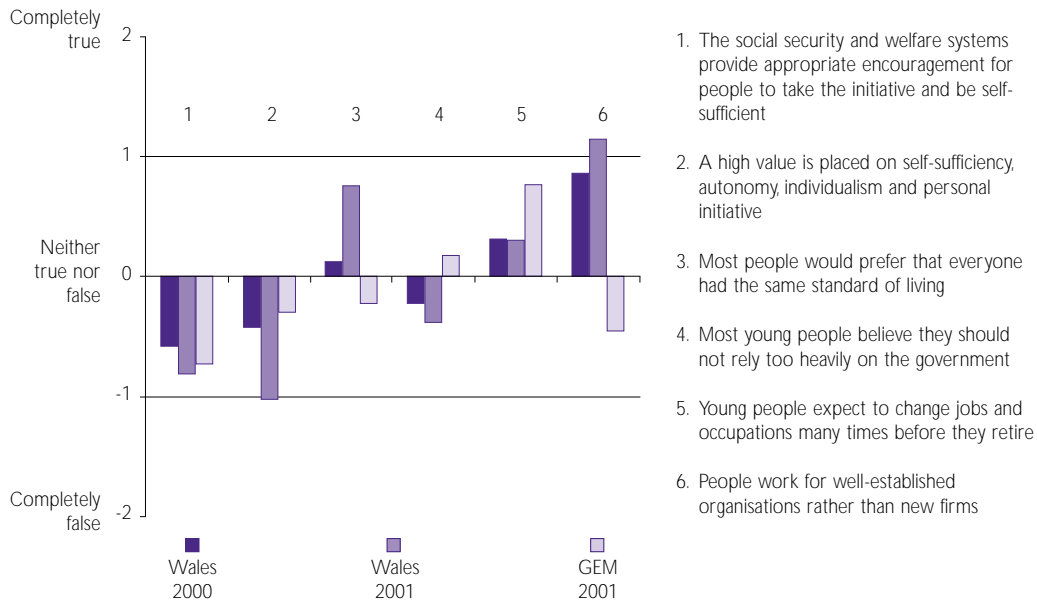
Figure 24 International comparisons - Cultural and Social norms



This year's key informants also believe that there has been a considerable improvement, relative to last year, regarding the value of entrepreneurial characteristics such as self-sufficiency, autonomy, individualism and personal initiative. Whilst still below the GEM average, Wales' position has increased considerably since 2000, when only Japan was lower than Wales in terms of appreciating the enterprising qualities of individuals. There has also been a significant decrease in respondents believing that everyone should have the same wealth, which is against the main tendencies of the majority of GEM countries, although more in line with economies such as Singapore, Ireland and the USA.

The perception that there is a dependency culture amongst young people within Wales still exists, although this has declined since last year. However, internationally, only young people in South Africa, France and Belgium have a heavier reliance on the government, in contrast to the leading entrepreneurially-active nations such as the USA, Mexico and Argentina, where there is little perceived dependence on government by the younger generation. In addition, Wales is one of the nations with the lowest scoring to the question asking whether young people expect to change jobs and occupations many times before they retire. Indeed, the predominant importance of the public sector as an employer within Wales may be leading to an environment where young people joining such organisations will expect a 'job for life', in contrast to private sector dominated economies. This attitude towards traditional employment is reflected in the wider economy, where it is suggested by the key respondents that more people wish to work for established businesses in Wales, as opposed to new firms, than any other economy in the GEM study, which reflects the legacy of large firm employment within many parts of Wales¹⁶.

Figure 25 Cultural and social norms - National and International comparisons of expert opinions



Adult Population Survey

As part of the adult population survey, we ask people a number of questions about their attitudes towards entrepreneurship. However, unlike last year, issues such as 'respect in community' and 'success envied in community' have been omitted by the GEM global team. The only remaining question dealing with this issue is that of fear of failure.

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 2001, 28 per cent of respondents to the adult survey said that fear of failure would prevent them, compared to 29.3 per cent in 2000.

Figure 26 below shows that Wales is ranked 24th of the 31 nations - with roughly half the percentage score as Germany. Much of this must be bound up in cultural explanations because not only does the US have the lowest 'fear factor', but it is closely followed by Japan, one of the least entrepreneurial nations. Whatever the explanation, for the second year running Wales does not appear to have much of a problem with fear of failure and perhaps historical hearsay and traditions of 'gloom and doom' have more to do with this than reality.

Figure 26 Fear of failure would prevent me from starting a business

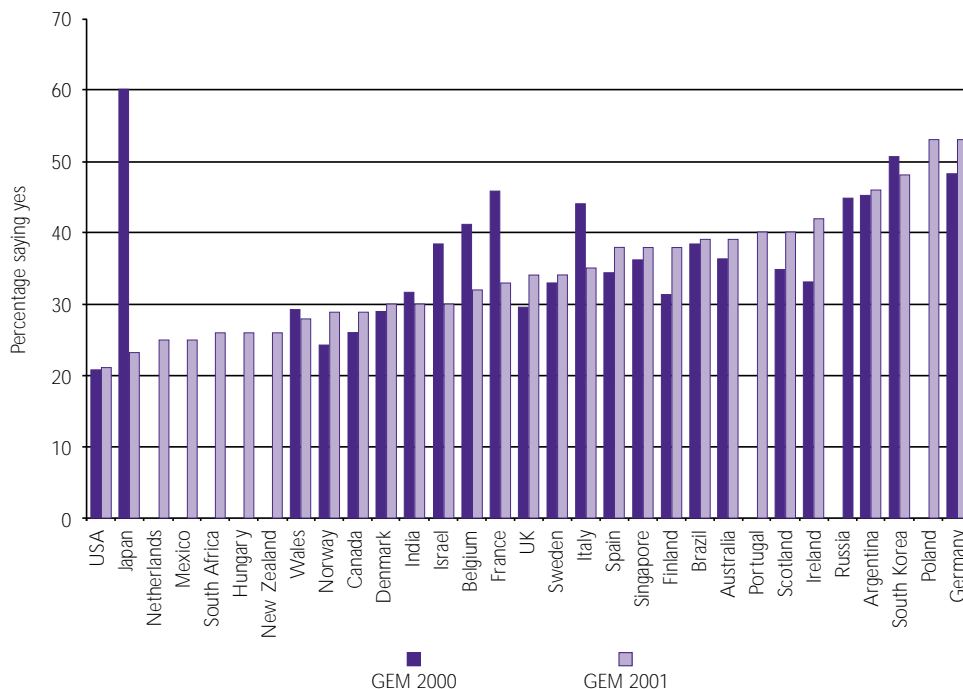
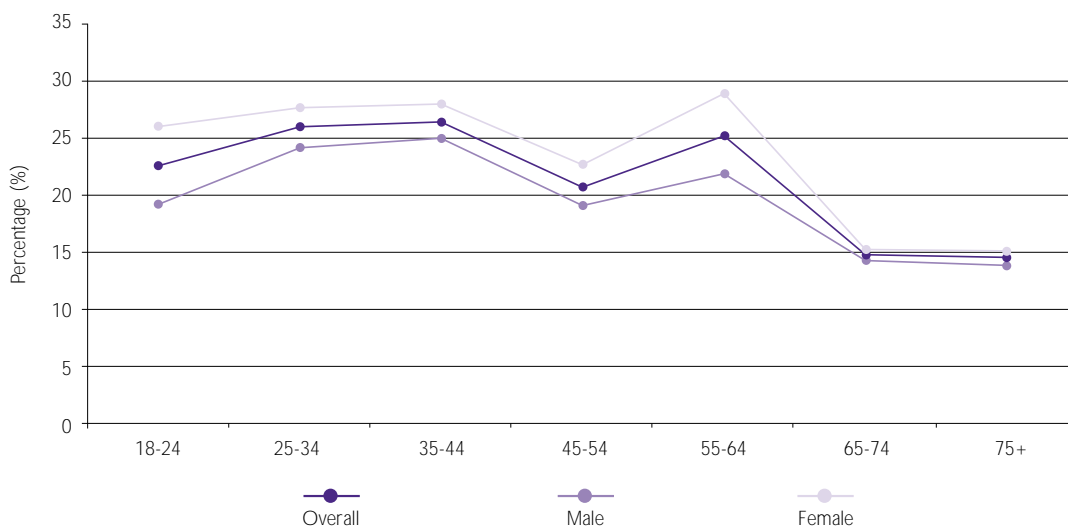


Figure 27 shows the age and gender profile of those people in Wales who said that fear of failure would prevent them from starting a business. There is clearly a similar pattern or path for both genders and a falling off post-retirement, when people are generally more financially sound. The profile climbs towards middle age when risky ventures can impact upon families, property and savings.

Figure 27 Percentage of People who say that fear of failure would stop them from starting a business



ENTREPRENEURIAL OPPORTUNITY AND CAPACITY

The previous sections have examined the entrepreneurial framework conditions of the GEM model in some detail. These provide the context and environment within which more entrepreneurial activity can take place. However, the link to economic growth and prosperity requires more. It requires more individuals who can spot good business opportunities, and who have both the skills and the motivation to make the most of them.

In the section that follows we weave together some of the findings from the adult population survey with the opinions of the experts to give a picture of how well Wales is placed to carry out this task.

KEY INFORMANT INTERVIEWS

In terms of entrepreneurial opportunity, Wales has improved its standing marginally since last year relative to the other GEM nations, although it is well behind the leading nations such as the USA, Ireland, Finland and Brazil, and is below the GEM average on all five measurements of opportunity (Figure 28)

According to the key respondents, people in Wales do not perceive lots of good opportunities for the creation of new businesses, although this is an improvement on last year's findings. Whilst the key respondents believe there are more good opportunities in Wales than people to take advantage of them and that good opportunities have increased for new firms in the last five years, potential entrepreneurs are being hindered by the lack of information available to help new businesses (Figure 29).

With regard to creating high growth businesses, the Welsh experts were more pessimistic than last year, although generally in line with the GEM average for the study. The countries where most high growth businesses are expected to be created are the USA, Ireland and the Netherlands.

Figure 28 - International comparisons - Entrepreneurial opportunities



Figure 29 - Entrepreneurial Opportunities - Comparisons of expert opinions Wales 2000 & 2001



ADULT POPULATION SURVEY

Figure 30 shows that in Wales only 11 per cent of the population think that there will be good opportunities to start a business during the next six months. This ranks Wales in 28th place, with only Hungary, Japan and France being more pessimistic. The most optimistic country is again Norway, which has almost 60 per cent of its population believing there will be good opportunities. Considering that the survey was conducted prior to September 11th, which presumably would have had an impact on all nations, the people of Wales are still rather gloomy when compared to most other nation.

Figure 30 In my country there are good opportunities for a startup in the next six months (Adult Survey)

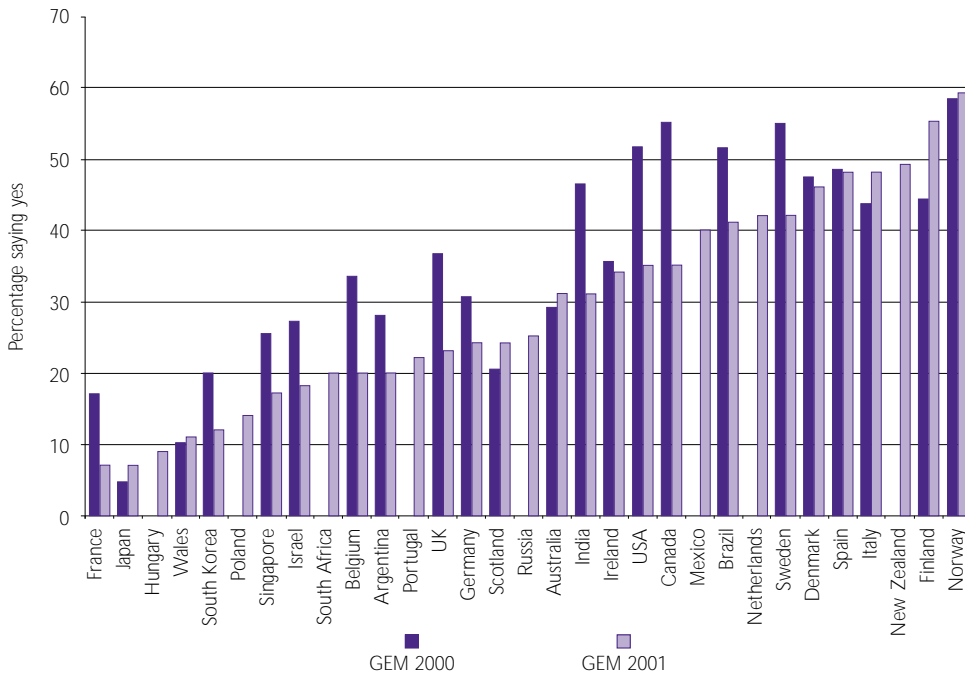
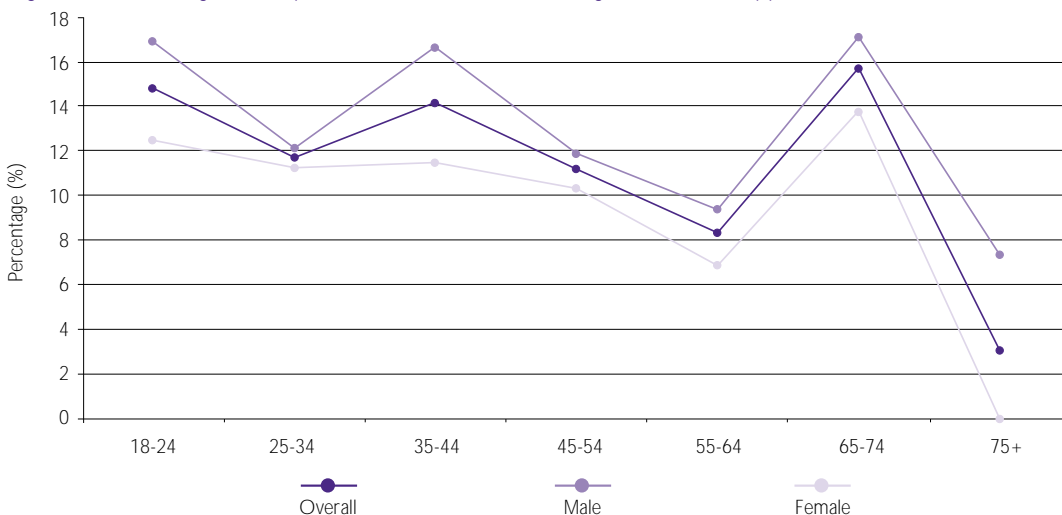


Figure 31 confirms that people in Wales generally seem to get less optimistic about future opportunities as they get older - with the possible exception of the spike at retirement age when perhaps new opportunities can finally be exploited by potential third age entrepreneurs.

Figure 31 Percentage of People who believe there will be good business opportunities in the next six months



The survey also asks about two other aspects of peoples' lives that may impact upon their willingness to engage in new business start-up. The first of these reports on whether business conditions will be better or worse one year from now. The second asks whether the respondent believes that his or her family's financial position will be better or worse one year from now. Figure 31 illustrates once more that pessimism appears to be positively correlated with age.

Entrepreneurial capacity

Whilst the perception of opportunity is important, alone it is not sufficient for entrepreneurship to take place. As we have described earlier, an individual must also possess the entrepreneurial capacity - both skill and motivation - to start a business.

As in last year's study, the assessment of the all nations' key informants is extremely pessimistic, with the USA again being the only exception (Figure 32). In terms of more specific issues, few of the key informants in Wales believe that the creation of new or high growth businesses is easy. Indeed, the development of high growth businesses is only seen positively in four countries - Spain, Finland, the USA and the Netherlands.

Figure 32 International comparisons - Entrepreneurial capacity (skill)

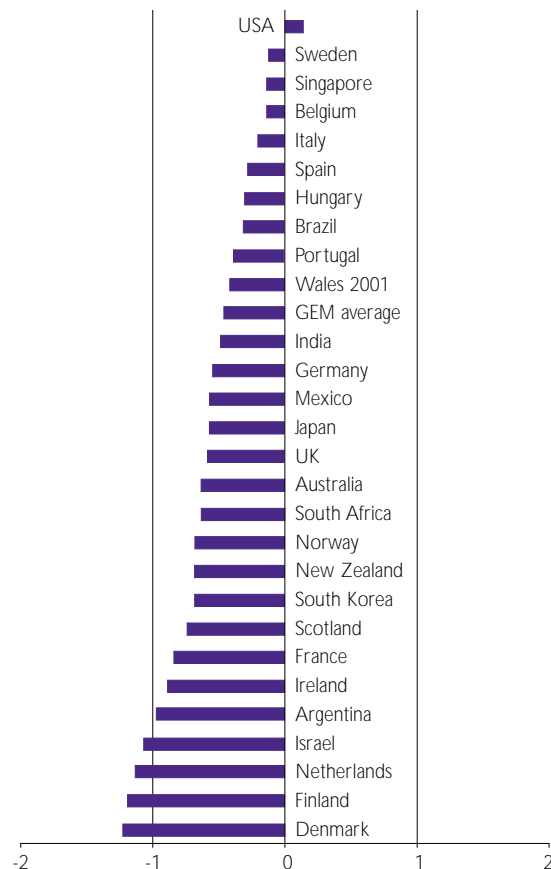


Figure 33 Entrepreneurial capacity (skill) - Comparisons of expert opinions Wales 2000 & 2001



In terms of starting a new business, Wales has one of the lowest scores internationally in terms of people who know how to manage a small business with key informants from only two countries - South Korea and Sweden - stating that small business management was common amongst their population (Figure 33). However, the profile has improved in Wales since the GEM 2000 study both in terms of managing a business, in terms of experience in starting a business and in organising the resources for a new business.

Welsh key respondents also express the belief that there are few people who can take advantage of opportunities and this opinion has not changed significantly since last year.

Adult population survey

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. Figure 34, however, indicates that only 28 per cent of adults in Wales believe that they have the knowledge, skills and experience to start a business, confirming the key respondents study.

This clearly points to a need for enterprise education, as well as training and support for aspiring entrepreneurs in Wales. Figure 35 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.

Figure 34 You have the knowledge, skill and experience to start a new business

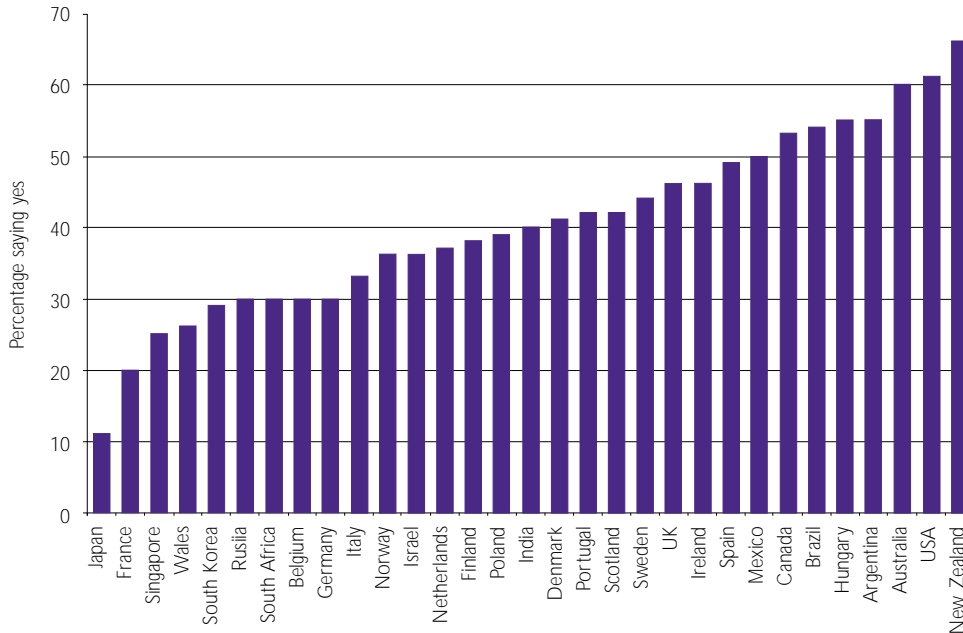
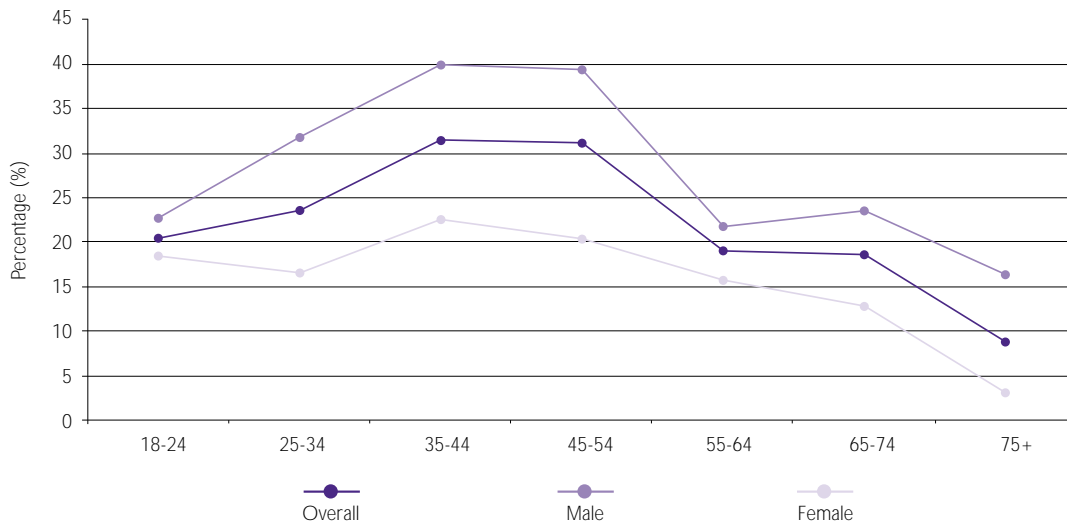


Figure 35 Percentage of People who think that they have the skills to start a business



Entrepreneurial motivation

In terms of entrepreneurial motivation, the key informants believe that Wales is at the GEM average, with the USA, Israel and Italy being the leading nations (Figure 36). However, it is worth noting that the Welsh key informants also believe that the situation has changed dramatically since the GEM 2000 study (Figure 37). A majority view entrepreneurship positively, with Wales being the leading nation amongst the GEM respondents. Unlike last year, the creation of new ventures is now perceived as an appropriate way to become rich in Wales, and is a desirable career choice for many individuals starting a new business rated lower. Indeed, Welsh experts, in contrast to last year, did not feel that people only started new businesses when they could not find a good job elsewhere.

Figure 36 - International comparisons - Entrepreneurial motivations



Figure 37 - Entrepreneurial motivations - Comparisons of expert opinions Wales 2000 & 2001



KEY FINDINGS FOR WALES

Total Entrepreneurial Activity

- Had a TEA score of 6 per cent in 2001, up from 3.7 per cent in 2000 i.e. 6 people in every 100 aged 18-64yrs in Wales are actively involved in starting or running a new firm.
- Wales ranks 26th out of the total group of 31 GEM nations - above Scotland, which has a TEA score of 5.1 and ranks 29th, but below the UK, which has a TEA score of 7.7 and ranks 19th.
- The most entrepreneurial nations in GEM 2001 were Mexico (18.7), New Zealand (18.2), Australia (16.2) and South Korea (14.9). The United States had a TEA score of 11.7, approximately twice that of Wales. The bottom countries were Belgium (4.6) and Japan (5.1).
- Wales has 4.4 per cent of its population involved pursuing their start-up idea because they had spotted an opportunity in the market (opportunity-based entrepreneurship) ranking Wales at 25th out of the 31 nations. This compares with 3.4 per cent in Scotland and 5 per cent in the UK. Across the GEM global study, the prevalence rates vary from 2 per cent in Israel up to 15 per cent in New Zealand, with an average of about 6.5 per cent).
- In contrast, Wales has a necessity-based prevalence rate of 0.8 per cent, the same as Scotland, with the UK at 1.4 per cent. Across the GEM study, this varies from Norway having 0.3 per cent of entrepreneurs indicating that necessity had motivated their choice to start-up up to India with 7.5 per cent.
- The gender profile of entrepreneurship in Wales has changed since last year's study, with those involved in starting or managing a business comprising of 71.5 per cent male and 28.5 per cent female (a TEA index for men of 8.8 and of 3.5 for women).

Start-Up Activity

- With regard to the level of nascent entrepreneurship (or start-up) activity, only 3.1 per cent of the adult population in Wales were participating in start-ups in 2001, an increase of approximately 50 per cent since last year
- However, relative to other nations, Wales is still ranked 28th out of the 31 GEM nations, with only Scotland, Netherlands and Israel having a lower rate of start-up.
- The top ranked nations - Mexico (12.7 per cent), New Zealand (9.3 per cent) and Brazil (9.2 per cent), have experienced a start-up activity rate in 2001 which is three times greater than that in Wales. This means that Wales is slowly closing the gap with the leading entrepreneurial nations
- Wales still lags the UK rate of 4.9 per cent, which supports other data (such as VAT registrations).
- There seems to be very little start-up activity by the corporate sector in Wales, with only 10 per cent of new firms being established by individuals trying to start a new business or a new venture with their employer
- Similar to last year, there were no new start-ups in Wales that could be classified as growth firms in 2001 (i.e. employing more than 50 people in five years time).

New Firm Activity

- 2.9 per cent of working age adults in Wales in 2001 were actively involved in new businesses (up to 42 months old), ranking Wales 17th out of the 31 nations in the GEM study - a significant improvement on last year.
- This is now a higher rate than both Scotland and the UK, which ranked 28th and 19th respectively.

Business Angel Activity

- Only 0.2 per cent of the Welsh adult population had invested funds in new businesses started by other individuals during the last three years. As with last year's study, Wales is bottom of the global league table for this type of informal investment. New Zealand - the highest ranked country - had 6.8 per cent of the adult population involved in funding business.

- Again, Welsh business angel activity in Wales is involved with family or friends, with no finance being provided to persons or businesses with which the investor had no previous relationship.

Opportunities and barriers to entrepreneurship

- As with last year's study, there is a low perception of opportunity in the market place, with only 11 per cent of the Welsh adult population believing that there are good opportunities to start a business during the next six months, ranking us 28th in the GEM study (with only Hungary, Japan and France being more pessimistic). The average for the GEM nations was 29 per cent.
- 28 per cent of Welsh population consider fear of failure as a barrier to starting a business, similar to GEM 2001, ranking us 24th globally.

LESSONS FROM GEM WALES 2001

- The Global Entrepreneurship Monitor data is just one measurement of entrepreneurial activity within Wales and should be read in conjunction with other studies being developed as well as existing government reports, such as VAT data. Currently in its second year, the research identifies a number of attributes of entrepreneurship within Wales and, more importantly, enables us to benchmark our nation against other countries globally.
- The key message from this year's study is essentially 'steady as she goes'. The results from the research undertaken suggests that entrepreneurship is slowly becoming more prevalent within Wales, although there needs to be considerably more work undertaken to embed an enterprise culture within Welsh society.
- Clearly, some of the projects being developed under the umbrella of the Entrepreneurship Action Plan are beginning to have an effect on the perception of entrepreneurship by the Welsh public and this may have begun to feed through into actual start-ups. The work to raise national awareness of entrepreneurship and to promote an entrepreneurial culture and driven through £10 million of funds secured via Objective 1 is clearly going to be crucial in delivering part of this programme.
- However, despite improved results, there are clearly too few people within Wales willing to engage in entrepreneurial activity in such a way that the small firm sector can contribute significantly to the task of closing the prosperity gap with the rest of the UK.
- In particular, there is a need to promote support for more start-ups by groups such as women, young people and the over 50s. Considerable work has been started and undertaken under the Potentia project umbrella but the GEM 2001 results point to the need for further work to address the imbalance in participation in entrepreneurial activity by these groups.
- The aim of the Welsh Assembly Government to establish a Business Birth Rate Strategy may well help to create greater entrepreneurial activity although it is important to heed the lessons of other nations, such as Scotland, that have attempted to increase the number of start-ups through a direct interventionist approach.
- Indeed, the lessons learnt by Scotland in their first attempt at developing a business birth rate strategy, which was seen as a relative failure, is pertinent to the Entrepreneurship Action Plan and any business support directed towards developing new businesses. In particular, the Entrepreneurship Action Plan should consider the following issues: the need to recognise the core task as that of developing entrepreneurship and that raising the business birthrate is just one dimension of this; moving away from the reliance on simplified, over-arching targets (like one of "closing the gap" in

the business birthrate between Scotland and the rest of UK); the need to address variations in performance across the region in terms of the cost and impact of providing support to start-ups; the need to address the issues such as supporting more start-ups by women and young people; and the need to improve the monitoring of programme activity - particularly in terms of linking programmes with the overall objectives of policy.

- The lack of opportunity perception among the general population remains a major barrier to the growth of entrepreneurship in Wales and is a real issue in changing the culture to one that is more positive towards new venture creation. As the UK GEM report points out, 'increasing the number of start-ups for the sake of it' is not enough and there is a real issue about raising confidence and optimism within the Welsh population to recognise and take advantage of opportunities to establish new entrepreneurial activities. This is where the Welsh Assembly Government has to be careful in ensuring that the development of an entrepreneurial society goes hand-in-hand with the provision of adequate and relevant support for those who make the jump into entrepreneurship.
- The GEM study further suggests that there are few people who also believe that they have the necessary skills to manage a business. This key issue of relevant enterprise education and training is something that organisations such as ELWa need to address as a matter of urgency. However, entrepreneurial education at all levels should be seen as an integrated process, not as an add-on to current activities, which is the approach that a number of current prominent programmes are pursuing.
- The lack of growth businesses in this year's study again highlights the fact that a high priority needs to be given not only to creating new businesses but also to expanding existing ones. One of the authors of this report recently produced a policy paper emphasising the importance of developing the potential of the existing entrepreneurial business base within Wales. To date, very little has been done to develop the competitiveness of those firms wishing to grow further and this must become a key priority for the Welsh Assembly Government in the next twelve months.
- The expert interviews have again provided a valuable source of information as to some of the key issues in developing an entrepreneurial Wales. As with last year, enterprise culture (which we have already discussed) and finance remain high on the list of concerns.
- Whilst the results suggest that Finance Wales has been a success in providing loans and equity since its launch last year, the lack of informal investment in Wales remains a major problem, especially as it is this type of culture which is prevalent within most high-performing entrepreneurial nations. Therefore, in addition to the provision of funding to small firms, this study would urge Finance Wales to begin a programme of equity education amongst potential investors and small businesses in Wales to highlight the positive benefits of investing in enterprise.
- Interestingly, research and development infrastructure is now growing as a key concern for many key informants in terms of the development of an enterprise infrastructure in Wales. Despite the plethora of schemes that have been developed, Wales still does not have the scientific and technology infrastructure required for a high value knowledge economy and which can support the development of a strong high technology small firm sector. This is clearly a priority area for the Welsh Assembly Government to address both in terms of support to both universities and private firms especially if we are to create the innovative high technology ventures that are becoming increasingly important in the development of a knowledge-based economy.

- Whilst this report examines the development of entrepreneurship within Wales, it is clear that the creation of high growth firms in key technological industries (which have been shown to make a disproportionately strong contribution to developed economies) requires a strong knowledge base from which to grow and develop. Given the declining state of R&D within Wales identified in the GEM study, this report calls for greater action by the Welsh Assembly Government to establish a coherent science policy for Wales to ensure strong R&D within the public and private sectors in Wales to create a foundation for the development of a strong high technology firm sector. At the very least, the authors believe that the Welsh Assembly Government should demonstrate its commitment to R&D through establishing a new body to advise on science and technology policy related issues within Wales. Based on a similar model to the Irish Council for Science, Technology and Innovation (ICSTI), this advisory body, consisting of leading science academics and technological industrialists/entrepreneurs, will advise the Welsh Assembly Government on the strategic direction for investment in science, technology and innovation, on key funding decisions for promoting greater investment in R&D, and on the development and implementation of all-Wales programmes in science and technology
- Finally, as with last year's study recommendations, the authors believe that the Entrepreneurship Action Plan has made very little use of the expertise available within Welsh institutions (and in their national and international networks) to help develop the Entrepreneurship Action Plan. Therefore, the research team repeat their recommendation that, as with the Finnish Government's Decade of Entrepreneurship programme, the Welsh Assembly Government and its bodies must strive to use the best available indigenous and external expertise to support the development of entrepreneurial activity in Wales and develop the best policies and practices for Welsh enterprise.

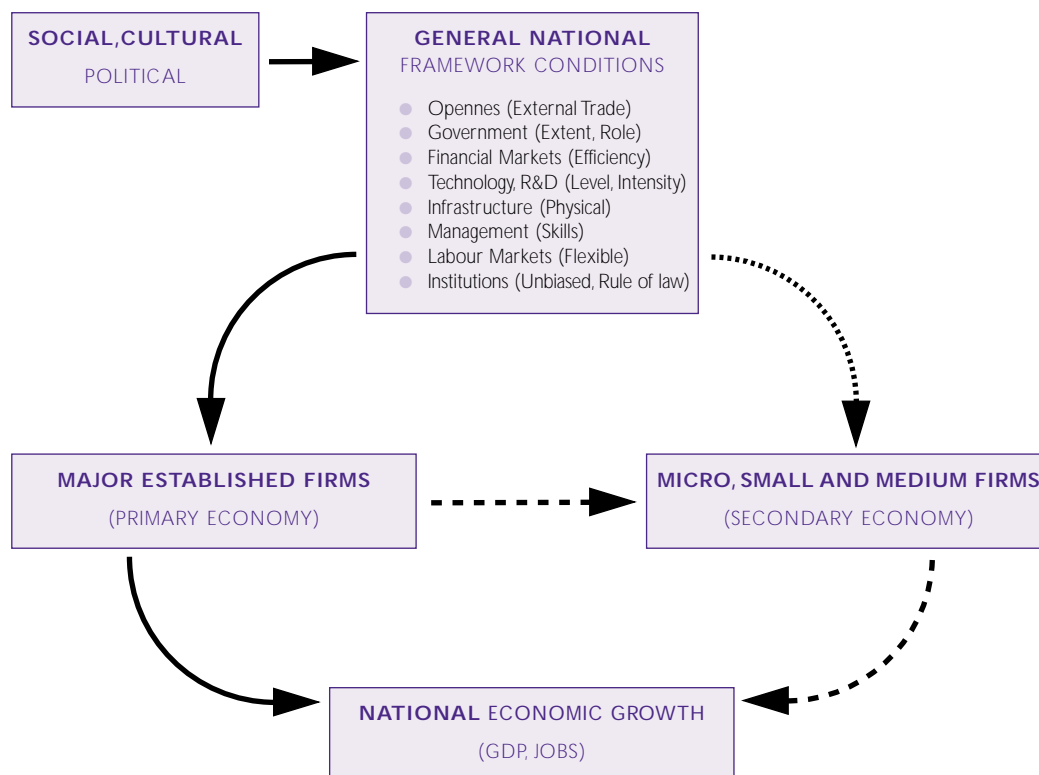
APPENDIX

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 38 illustrates this conventional approach to the process leading to economic growth via larger businesses.

Figure 38 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.

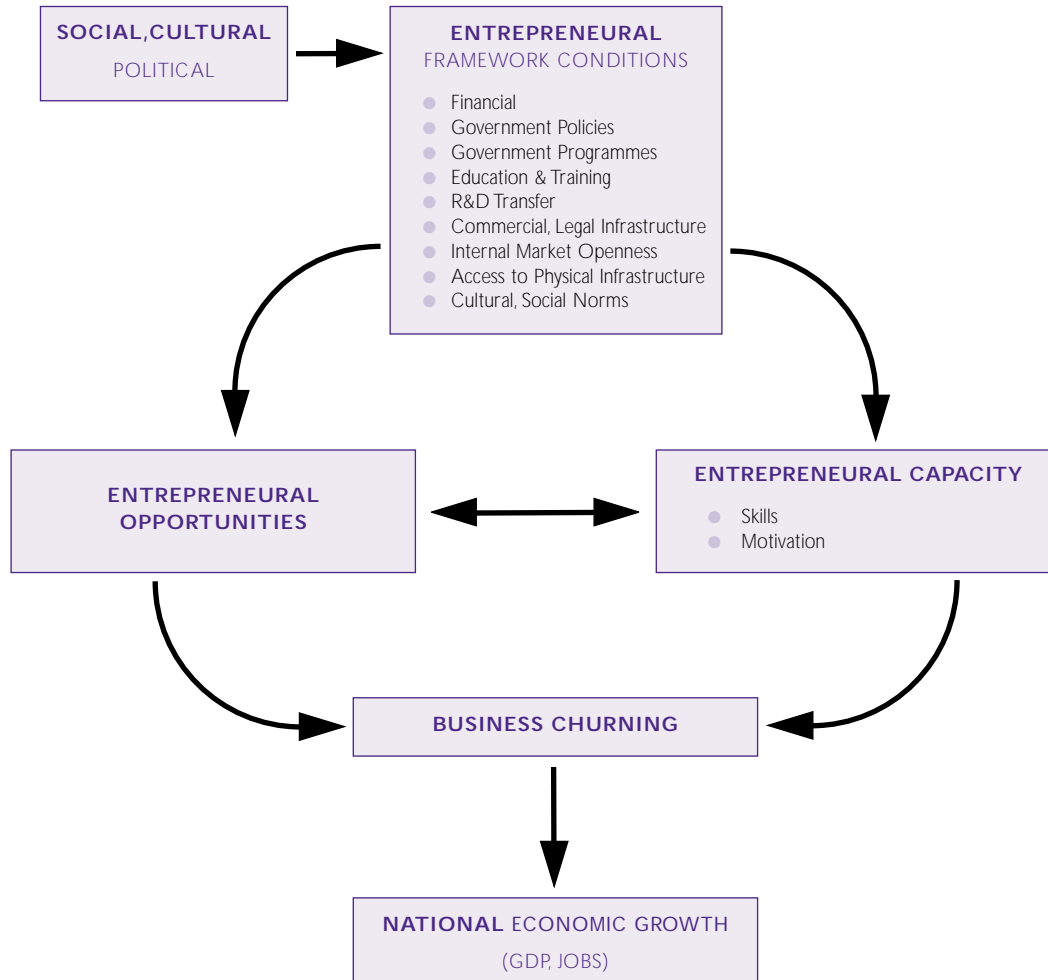
As Figure 39 demonstrates, entrepreneurship can have a direct impact on national economic growth. This model includes a large number of factors ignored in the conventional economic models. Firstly, it can be recognised that entrepreneurial activity is shaped by a distinct set of factors - the **Entrepreneurial 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.

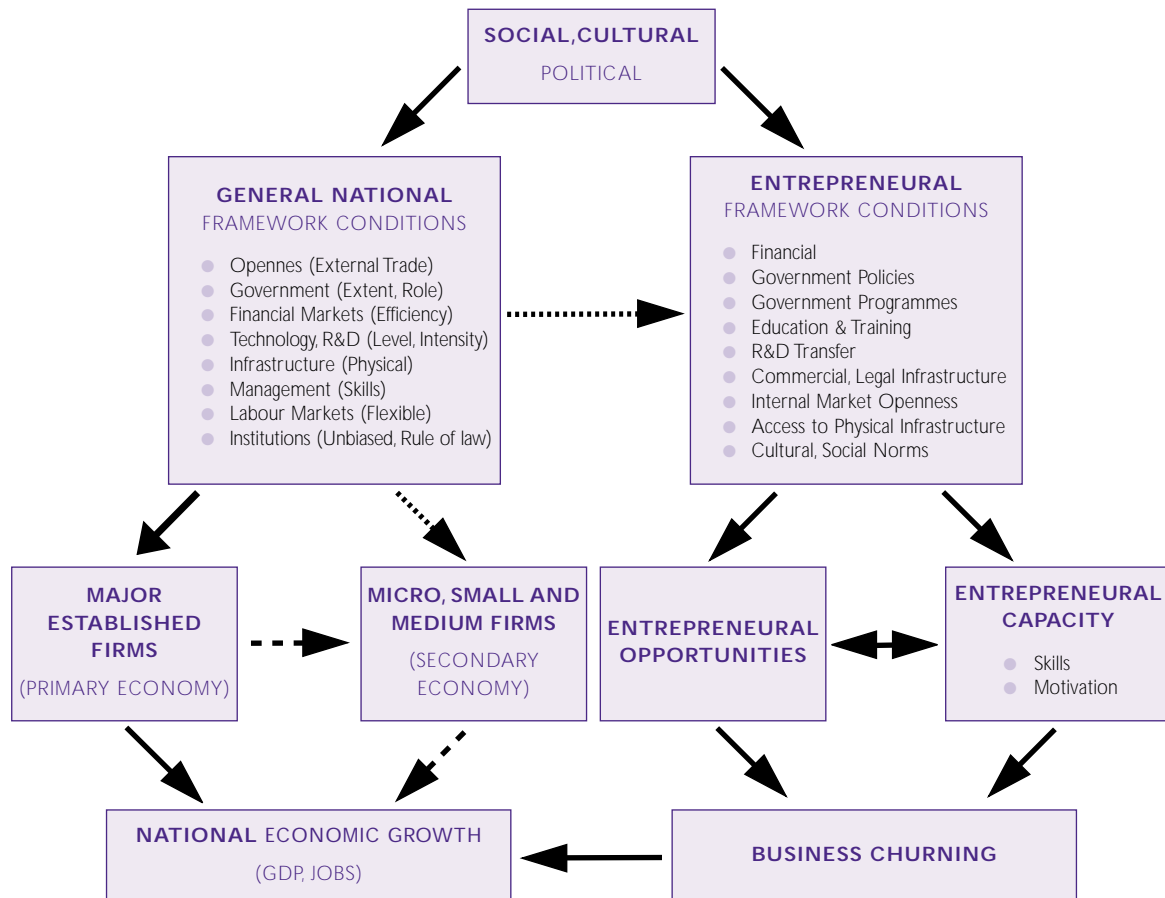
It is the interaction between entrepreneurial opportunity and capacity that leads directly to the creation of start-ups within an economy. However, as an economy creates new births and subsequent jobs, it is likely that there will also be a corresponding increase in firm deaths and job destruction. The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

Figure 39 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 40 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 2001, nearly 80,000 individuals were surveyed across the World, with 2015 respondents in Wales. These surveys produce a 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 29 GEM countries and the 2 GEM regions of Wales and Scotland, more than 950 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.