

European Demographics at the "Core"- Consumers and Workers

Global Demographics

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It's not merely about population numbers, rather it's about people characteristics

- Demographics is about both the old and the young. The age structure of the population has implications for consumption sectors, savings and GDP. Therefore, it is misleading to simply look at people numbers. Focusing on their changing characteristics and behaviour is imperative to understanding their demands for both businesses and policy-makers.
- We compare key demographic and economic indicators across 12 selected European countries, Germany, France, UK, Italy, Spain, Poland, Netherlands, Greece, Portugal, Hungary, Sweden and Ireland. GDP per capita rankings differ from GDP rankings reflecting the population differences amongst them.
- Some countries such as Germany, Poland and Hungary have experienced negative population growth between 2005-2010. However, in Germany this has not resulted in a shrinking labor force due to increased economic activity rates, this stresses the importance of considering population growth rates in conjunction with economic activity rates.
- We document differences in Economic Activity Rates, broken down by gender and age. Economic activity rates for women are lower than those of men across all countries. Variations exist in the **proportion of labor force employed** in different sectors and the **contribution of different sectors to gross value added**, across different countries. This shows the productivity of the labor force employed in each sector.
- Higher life expectancies along with slow changes in retirement ages are leading to increased expected years in retirement. This leads to fiscal strains on governments and sustainability problems, which are currently top of all economic issues facing European economies. We show differences in retirement periods, average public pensions wealth and relative incomes of the old, across these economies all of which affect fiscal sustainability.
- Differences in median as well as age-specific consumer preferences get reflected in the varying composition of consumption expenditure across these countries. Consumers in these countries devote different percentages of their expenditures to the broad categories of goods and services they consume. This leads to differences in sector outlooks based on those categories.

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"Core" European Demographics: Consumers & Workers

This report presents certain salient demographic characteristics across a select group of 12 European countries, comparing and contrasting them, while continuing to focus on consumers and workers. Our demographic analysis has constantly highlighted the importance of demographics stemming from the fact that "people characteristics" are no less important than "people numbers" from both micro and macro viewpoints. They show up in individual behaviour, family behaviour, societal and national behaviour from both a consumer as well as a worker angle.

Microeconomic theory foundations are built on how consumers behave and notions of equilibrium are constructed based on how consumer demands are met by production of goods and services. Simple analytical constructs of consumer behaviour are depicted by utility functions, indifference curves, value functions, demand curves but at the core of it lies consumer preferences. Consumer preferences differ across age, gender, migrant status, education, parental background etc. Yet in most neoclassical microeconomic models many of these characteristics are subsumed under the overall term "heterogeneity". With advances in the fields of experimental economics and behavioural economics/behavioural finance over the last two decades and their incorporation into mainstream economics, consumer and investor psychology are being studied much more.

Our research has emphasized that consumer differences exist across many demographic characteristics. In this report, we show that significant demographic variations exist across European countries and get reflected in both consumption and worker behaviour. This is important for firms, investors, analysts and policy-makers to pay attention to. The essence of our argument hinges on the fact that two seemingly identical individuals on one dimension may display very different responses towards "incentives" and "constraints" based on other demographic characteristics. This could happen as a consumer or as a worker, both are important because micro differences sum up to influence aggregate consumer demands and aggregate labour supplies which in turn affect the GDP and other economic aggregates. We focus on both young and old consumers as well young and old workers/old retired in all of our demographic analysis. It is important to highlight strongly that we believe demographics is not just about population aging as many perceive it.

In this report, we divide the set of 12 countries into two groups – major and minor countries. This division is based on 2009 GDP figures and 2010 projected population levels. The major countries in our study are Germany, France, Italy and the UK while the minor countries are: Spain, Portugal, Poland, Netherlands, Greece, Hungary, Sweden and Ireland.

Our objective is to present the varying demographics and economics of these countries along dimensions such as age, gender, income, economic structure, labour composition etc. This affects markets, policies, institutional structure, regulation etc. in a more endogenous general equilibrium way too. We look at the latest available data in order to compare and highlight the existing heterogeneity across these economies.

We present population and labour force differences as well as GDP differences at the aggregate level to show the contribution of demographics to GDP¹ as well as how economic well-being in a GDP per capita sense is affected. Then we contrast the structure of these economies in terms of their stages of economic growth² showing that while broadly similar, there exist differences in shares of agriculture, manufacturing and services across them. We follow that by contrasting the share of their work forces in these sectors to highlight differences across labour structure and also productivity. We present some comparable statistics in terms of per capita contribution to GDP in each of the sectors to draw attention to the fact that there exist many differences³.

¹ A Demographic Perspective of Economic Growth, Credit Suisse Demographics Research (2009) shows an analytical framework with demographic drivers of GDP growth.

² W Rostow (1960) in a seminal economic book "The Stages of Economic Growth" described the stages of Economic Growth that economies go through in different stages of development.

³ Angus Maddison (2001), in several articles also highlighted these differences as contributing differently to economic growth in the Western economies over the last 1000 years.

We display demographic differences in the structure of the labour force in terms of economic activity rates of different age groups in the work force and gender differences in economic activity rates. The International Labour Organization (ILO) defines economic activity rates as follows:

'The economically active population comprises of all persons supplying labour for the production of goods and services during a specific time period. The economic activity rates show the percentage of economically active population in the total population.'

These again show differences that are noteworthy and important to understand for all employers, employees and policy-makers. We understand and acknowledge that the data reflects institution structure, labour supply, labour demand, the stage of business cycle etc.

Next, we show increased and high life expectancies across all these countries as well as rising old-age dependency ratios. We highlight decreased economic activity rates from certain ages which along with increased life expectancies and slow changes in retirement ages augur badly for fiscal expenditures and the balances of the governments.

The differences in relative incomes and pension wealth of older people across these countries give an indication of the general well being of the old and the generosity of public pensions provision. We present the increased life spans post retirement across these economies, highlighting the need for holistic labour and pension reform⁴ to deal with the potential challenges by converting them into opportunities to harness the best of "older workers experiences" for an overall societal gain in terms of economic welfare.

These differences in public pensions provisions are indicative of the need for increased savings in conjunction with existing pension plans as a solution to the retirement challenges being faced by current and potential retirees. This was also advocated by one of the most prominent economists of the last 70 years, Franco Modigliani⁵, who pioneered Life Cycle Hypothesis theory and supported the move towards defined contribution plans in the US in the 1980s.

On the consumer side, we show differences in consumption expenditures composition and also as a share of disposable income across these countries. This has various implications across different sectors for sectoral growth patterns as we have discussed earlier⁶ and it is possible to develop demographic-based sector and stock portfolios that should perform very well across the business cycle.

In the charts that we present, the population data refers to mid-2010 levels and the population growth data refers to the 2005-2010 period. The data is sourced from the UN Population Division and is technically still a projection based on national sources that follow a common methodology.

⁴ See "A Demographic Perspective of Fiscal Sustainability", Credit Suisse Demographics Research (05 Feb 2010)and Credit Suisse Research Institute 's "Country Indebtedness 1" Report for more details.

[&]quot;Rethinking Pension Reform (2004), F. Modigliani and A Muralidhar

⁶ "Global Demographic Change and Sector Implications (2006)", Credit Suisse Demographics Research



Exhibit 1: Population Levels: Major countries



Exhibit 2: Population Levels: Minor countries



Source: Credit Suisse, UN

The high population levels in the major countries contrast with the relatively lower levels in the minor countries as shown in Exhibit 1 and Exhibit 2. Higher population levels can be very beneficial for GDP growth if larger shares of population are in the working age group and are employed in jobs that harness their education and skills. There are significant differences in population numbers that affect labour force numbers and ultimately GDP levels.

Even though Germany exhibits the highest population level in 2010 (82.06 million), its population growth was negative in the period 2005-2010. The UK demonstrated the fastest growing population in 2005-2010 (0.54% per annum) amongst the major countries (see Exhibit 3 and Exhibit 4).

Spain's population grew at a high pace (1.02% per annum) in 2005-2010, which has increased its population level to the highest amongst the minor economies in 2010 (45.32 million). The small populations of Hungary and Poland shrank between 2005 and 2010. While Ireland has the smallest population amongst the minor countries (4.59 million in 2010), it has been growing at the fastest rate between 2005-2010 (1.83% per annum).



Exhibit 3: Population Growth: Major

Source: Credit Suisse, UN

The Greek population grew at a rate of 0.22% over 2005-10 and its population level is less than 1/5th to 1/6th that of the major countries. The population growth rate differences between these economies can be linked to total fertility rate differences as shown in Exhibit 5 and Exhibit 6. The Total Fertility Rate is the average number of children a hypothetical cohort of women would have at the end of their reproductive period if they were subject during their whole lives to the fertility rates of a given period and if they were not subject to mortality. Fertility rates are closely related to population growth rates and this has been borne out in the last 30 years where declines in fertility rates were the major cause of declining population growth rates.

Source: Credit Suisse, UN

Source: Credit Suisse, UN



Exhibit 5: Total Fertility Rate: Major

Children per women - 2005-2010



Exhibit 6: Total Fertility Rate: Minor

Children per women - 2005-2010



Source: Credit Suisse, UN

Source: Credit Suisse, UN

The negative population growth of Germany, Poland and Hungary (Exhibit 3 and Exhibit 4) can be associated with their low total fertility rates while the highest population growth in Ireland can be linked to its high fertility rates (1.96 in 2005-2010).





Exhibit 8: Gross Domestic Product: Minor



Source: Credit Suisse, IMF

Exhibit 7 and Exhibit 8 demonstrate that the overall wealth of the major countries in 2009 exceeded that of the minor economies with Germany being the richest major country in terms of GDP. However in order to adjust for the effect of demographics on this overall wealth, one should also look at GDP per capita. The low population figures of Ireland makes it top ranking in terms of GDP per capita amongst the minor economies (USD 51,128 in current prices in 2009) as in Exhibit 9 and Exhibit 10



Exhibit 9: Per capita GDP: Major

Exhibit 10: Per capita GDP: Minor



Source: Credit Suisse, IMF

Source: Credit Suisse, IMF

As Exhibit 11 and Exhibit 12 demonstrate the labour force(s) in the major economies have grown at a positive rate but slower than those in some of the minor economies such as Ireland, Spain, Netherlands and Sweden. Despite, having a negative population growth rate, Germany managed to add to its labor force in 2005-2010.

This can be attributed to the increasing economic activity rates in Germany from 58.86% in 2005 to 59.99% in 2010. The economic activity rates show the percentage of the economically active population in the total population.



It is important to contrast these economies based on the **stage of economic growth** that they are currently in. The Exhibits in the appendix contrast the share of agriculture, industry and services in gross value added for each of the 12 economies to the share of these sectors in total employment. To get an idea about productivity we have combined the share of these sectors in gross value added as well as employment to display two indicators –

- The gross value added per person employed in the sector (Exhibit 13)
- The ratio of the percentage share of the sector in gross value added and the percentage share in employment. (Exhibit 14).

These are based on the latest sectoral value-added data available from Eurostat for the 12 countries that we consider.

Gross value added is the value of gross output less the cost of materials and other intermediate inputs. All the values and analysis are in thousands of euros per person employed in the sector. The maximum gross value added per person employed in the sector is highlighted in red while the minimum is highlighted in blue for each sector.



	Agriculture	Industry	Services
Germany	24.80	68.99	55.07
France	44.49	67.74	67.44
Italy	31.75	58.15	63.17
United Kingdom	31.96	82.95	60.28
Netherlands	42.32	87.65	55.40
Sweden	41.44	81.19	60.88
Portugal	6.13	24.77	35.41
Spain	28.02	47.51	47.47
Greece	14.80	44.49	50.51
Poland	5.31	18.74	21.27
Ireland	22.25	99.83	78.92
Hungary	11.39	20.62	24.47

Exhibit 13: Gross Value Added (at current basic prices) per person employed in the sector (2007) (Thousands of euro)

Source: Credit Suisse, Eurostat

For the agriculture sector, the highest value added country is France with 44.49 and the lowest is Poland at 5.31 followed by Portugal at 6.13 .A similar pattern of wide divergences can be seen for the Industry sector too, with Ireland being the highest at 99.83 versus Poland as the lowest at 18.74. In the services sector, Ireland has the highest gross value added with 78.92 and Poland has the lowest gross value added with 21.27

These figures illustrate the point that labour force numbers alone do not represent the complete picture. Productivity levels are as important in determining how demographics translates to GDP growth. Productivity levels get affected not only by education and skills but also by the institutional structure of the particular country.

We can also look at the ratio of the percentage share of sector in gross value added and percentage share in employment. For example in the case of Germany 2.1% of total labor is employed in agriculture which contributes to 0.9% of Gross value added (GVA) while 25.5% of total labor is employed in industry which contributes to 30.3% of gross value added. (See Exhibit 29 and Exhibit 30 in the appendix). Hence 1% of labor, if employed in agriculture will contribute to 0.43% of gross value added, if employed in industry will contribute to 1.19% of GVA and if employed in services will contribute to 0.95% of GVA in Germany.

The above measure gives an idea about the relative productivities across the sectors in each country as shown in Exhibit 14. In seven countries, 1% of the labor force contributes most to the gross value added if employed in industry while in Italy, Portugal, Greece, Poland and Hungary 1% of the labor force contributes most to the gross value added if employed in services



Patio

	Agriculture	Industry	Services		
Germany	0.43	1.19	0.95		
France	0.67	1.01	1.01		
Italy	0.53	0.96	1.04		
United Kingdom	0.50	1.30	0.94		
Netherlands	0.70	1.45	0.92		
Sweden	0.64	1.25	0.93		
Portugal	0.21	0.86	1.22		
Spain	0.60	1.02	1.02		
Greece	0.33	0.98	1.12		
Poland	0.29	1.03	1.17		
Ireland	0.27	1.22	0.97		
Hungary	0.51	0.93	1.10		

Exhibit 14: Percentage Share of sector in GVA/ Percentage Share in employment (2007)

Source: Credit Suisse, Eurostat

Apart from the sectoral distribution of labour force, it is also useful to look at the decomposition of labour in terms of age and sex. As shown in Exhibit 15 and Exhibit 16 the economic activity rates for men and women are the highest for the UK amongst the major countries in 2010 (69.51% and 55.36% respectively) and are the highest for men in Ireland (72.96%) and for women in Sweden (60.61%) amongst the minor countries. The gap between male and female activity rates in 2010 is the highest in Italy (21.93% in 2010) amongst the major countries and in Greece amongst the minor countries (22% in 2010). Gaps in Sweden (8.64%) and France (11.56%) are relatively smaller.



Exhibit 15: Economically Active Population: Exhibit 16: Economically Active Population: Minor Maior

Source: Credit Suisse, ILO

Source: Credit Suisse, ILO

It is also important to look at the trends in economic activity rates by age as shown in Exhibit 17. The maximum economic activity rates are highlighted in red while the minimum economic activity rates are highlighted in blue for each country. The maximum economic activity rates are seen in the age groups 35-49 years in the major countries and in the age groups 25-44 years in the minor economies. The least economic activity rates are seen in age groups 65+ in all countries except Portugal. The average effective age of retirement in Portugal is the highest for both men (66.6 years in 2002-2007) and women (65.5 years in 2002-2007) amongst the 12 selected economies.



Major countries											
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
Germany	30.13	69.75	82.08	88.31	90.28	91.16	90.26	86.65	76.95	44.03	4.08
France	17.39	64.09	87.57	89.18	90.18	90.46	89.76	83.78	61.87	20.31	1.41
Italy	10.41	49.93	73.53	81.09	81.93	80.70	78.91	73.88	49.60	21.14	3.35
United Kingdom	44.85	77.19	84.18	84.41	84.41	85.82	86.25	83.15	74.00	49.65	7.71
				Minor co	ountries						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
Netherlands	64.94	83.26	90.49	91.29	90.51	89.87	88.16	84.46	73.91	37.14	6.82
Sweden	31.41	75.89	87.24	91.70	92.50	92.22	90.42	87.91	83.15	67.15	11.75
Portugal	15.51	62.09	88.06	92.10	91.44	89.18	87.31	80.90	63.67	43.92	18.08
Spain	23.93	71.12	86.49	87.64	85.87	84.31	81.74	75.15	61.38	39.30	2.20
Greece	8.23	46.44	84.21	86.41	85.92	84.90	80.81	71.90	56.56	31.53	3.89
Poland	9.34	55.73	84.00	87.05	87.73	87.60	81.78	66.37	37.31	18.07	4.08
Ireland	26.87	76.02	85.92	84.50	82.10	81.05	81.68	76.54	65.61	47.80	9.12
Hungary	3.49	41.46	78.64	80.03	83.96	85.46	82.68	76.18	49.81	15.73	1.83

Exhibit 17: Economically Active Population by Age

Rates-2010

Source: Credit Suisse, ILO

The low economic activity rates post 65 years along with high and increasing life expectancies and old age dependency ratios are putting pressure on government finances as we showed in our Fiscal Sustainability report (Feb 05, 2010). The trend of increasing life expectancies is evident across all 12 countries (see Exhibit 18 and Exhibit 19).







Exhibit 19: Life Expectancy at Birth – Minor



Source: Credit Suisse, UN

Source: Credit Suisse, UN

Both sexes - in Years

France and Italy have the highest life expectancy at birth amongst the major countries (81.2 years in 2005-2010) while Spain and Sweden have the highest life expectancy amongst the minor countries (80.9 yrs in 2005-2010). The increased life expectancies are increasing the share of old people and leading to high old age dependency ratios. As shown in Exhibit 20, Germany and Italy demonstrate the highest old age dependency ratios (31 in 2010) amongst the major countries. Ireland has the least number of old dependents as a ratio of 100 people of working age amongst the minor economies (see Exhibit 21).



Exhibit 20: Old-Age Dependency Ratio-Major

People aged 65+/100 people aged 15-64 : 2010



Exhibit 21: Old-Age Dependency Ratio- Minor



Source: Credit Suisse, UN

Source: Credit Suisse, UN

The varied life expectancies at birth along with differing retirement ages lead to disparities in expected years in retirement for the 12 selected countries. According to OECD figures, men in France spend the maximum number of years in retirement amongst the major countries (21.4 years in 2004) and in Spain (19.years in 2004) amongst the minor countries (see Exhibit 22). Women spend a greater number of years in retirement as compared to men due to higher life expectancies and lower retirement ages.

When we consider the **weighted average pension wealth** (present value of transfers that societies are promising on average to future retirees under current pension system rules), the population share aged above 65 years as well as expected years in retirement as shown in Exhibit 22, we get an idea of average pension liabilities for the old. Amongst the major countries, Germany has the highest proportion of population aged 65+ years (20.5% of the total population) while Greece and Sweden lead amongst the minor countries with 18.3% of total population aged 65+ years. In terms of public pensions wealth on average, Netherlands, Sweden and Greece are amongst the most generous.

	Expected Year 2004	s in Retirement-	Population aged 65 or over- 2010 (in percentage)	Average Pension	Wealth (in USD)
	Male	Female		Men	Women
			Major Countries		
France	21.4	26.2	17	370,000	428,000
Germany	18.9	23.8	20.5	372,000	442,000
Italy	20.6	23.9	20.4	309,000	334,000
United Kingdom	17.6	21.9	16.6	273,000	313,000
Minor Countries					
Greece	18.2	21.8	18.3	411,000	477,000
Hungary	17.4	24.5	16.4	117,000	146,000
Ireland	15.1	18.9	11.4	301,000	357,000
Netherlands	19.5	24.2	15.4	797,000	932,000
Poland	16.5	23.7	13.5	80,000	87,000
Portugal	15.2	18.6	17.8	156,000	183,000
Spain	19.6	22.6	17.2	319,000	372,000
Sweden	17.8	22.9	18.3	480,000	550,000

	Exhibit 22: Expected	years in Retirement,	Population aged 65	years or over and Average	Pension Wealth
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Source: Credit Suisse, OECD, UN

Along with differences in the **number of years people live in retirement**, there also exists differences in the general well being of the old. As shown in Exhibit 23 the relative income of the old people (aged 65 years and above) is the highest in France (94.55% of average population income in the mid 2000s) and the lowest in the UK (72.9% of average population income in the mid 2000s) amongst the major countries. Amongst the minor economies Ireland has the lowest income amongst old people.

For the **median income earning man gross pension wealth** (measured as a multiple of gross annual individual earnings) is the **highest in Italy and lowest in UK** amongst the major countries. Netherlands and Greece have high levels of gross pension wealth reflecting the generosity of their public pension benefits. The gross pension wealth is higher for women as compared to men as women have greater life expectancy (see Exhibit 24).

Exhibit 23: Relative income of older people (65+)

Percentage of average population income in mid 2000s.

Major Economies				
France 94.55				
Germany	91.55			
Italy	83.45			
United Kingdom	72.90			

Minor Economies				
Poland	94.75			
Netherlands	87.05			
Hungary	83.83			
Sweden	81.98			
Greece	80.05			
Portugal	79.48			
Spain	79.08			
Ireland	65.93			

Exhibit 24: Gross Pension Wealth

Multiple of gross annual individual earnings - For the median earner

Major Economies					
Men Women					
Italy	10.0	10.7			
France	9.3	10.8			
Germany	7.2	8.5			
United Kingdom	4.5	5.2			

Minor Economies				
	Men	Women		
Netherlands	16.4	19.2		
Greece	14.3	16.6		
Hungary	12.4	15.4		
Spain	12.2	14.3		
Sweden	9.9	11.3		
Poland	8.4	8.6		
Portugal	8.1	9.5		
Ireland	7.1	8.4		

Source: Credit Suisse, OECD

Source: Credit Suisse, OECD

Next we focus on the consumer side and look at the net national disposable income which influences the consumption expenditures of individuals. As Exhibit 25 and Exhibit 26 show, the UK had the highest net national disposable income(29,900 euro per inhabitant in 2007) among major countries while Italy had the lowest (21,500 euro per inhabitant).

Within the minor countries, net national disposable income ranged from 7,000 euro per inhabitant in Poland to 32,700 euro per inhabitant in Ireland. Rankings based on national disposable income might differ from those based on per capita GDP due to differences in tax rates across these countries.



Exhibit 25: Net national disposable income

Euro per inhabitant - 2007



Exhibit 26: Net national disposable income



Source: Credit Suisse, Eurostat

Share - 2008

Source: Credit Suisse, Eurostat

We present the decomposition of consumption expenditure into various categories in 2008 (see Exhibit 27). Amongst the major countries, housing had the highest share in consumption expenditure in 2008 except in the UK where leisure, recreation and hotel dominates. Health goods and medical services has the lowest share amongst all major countries. In the minor economies, there is no single category which dominates the group as a whole. Amongst all categories, **the share of housing expenditures** is the highest in the Netherlands, Sweden and Ireland while leisure, recreation and hotel is the dominant category in Spain and Greece. Food, beverages and tobacco dominate consumption expenditure share in Portugal, Poland and Hungary. Health goods and medical services has the lowest share amongst all minor countries except the Netherlands and Hungary where clothing and footwear has the least share (see Exhibit 28).





Source: Credit Suisse, Euromonitor





Exhibit 28: Consumption Expenditure by Major Groups - Minor Countries

Share - 2008

Source: Credit Suisse, Euromonitor

There exists variation in the proportion of consumption expenditure on each category across the countries. Within the **major countries**, the share of housing varies from 21.09% of total consumption expenditure in the UK to 25.2% in France while the share of food, beverages and tobacco varies from 12.37% in the UK to 17.14% in Italy. Similarly the share of leisure, recreation and hotel also varies from 14.58% in Germany to 22.35% in the UK and that of health goods and medical services varies from 1.56% in the UK to 4.76% in Germany. A similar pattern of variation is observed in the **minor countries**. The share of housing ranges from 14.33% in Portugal to 27.7% in Sweden while that of food, beverages and tobacco varies from 10.07% in Poland to 28.97% in Spain and the share of health goods and medical services varies from 2.85% in Sweden to 6.30% in Greece. This consumption expenditure split thus gives us an insight into the outlook for various sectors in each of these countries.

Education and Miscellaneous Goods and Services

Conclusions

Leisure, Recreation and Hotel

We showcase demographic differences across 12 European countries divided into a major group (Germany, France, Italy and UK) and a minor group (Netherlands, Ireland, Greece, Spain, Portugal, Sweden, Poland, and Hungary). We believe that it is important to note that demographics is about people characteristics which become reflected in consumer and worker behaviours. Since many macro and finance models over the last couple of years have been criticized for not being so predictive, a lot of attention has been paid to trying to incorporate investor psychology, "animal spirits" and other nuances of consumer behaviour which were missing in those models. Demographic differences play a critical role in defining consumer and investor psychology. European labour and consumer markets are affected by their underlying demographics. Both policy-makers and businesses need to understand the demographic differences as these affect GDP, inflation, equity premia, bond spreads and real estate markets very differently across these various economies.



Appendix

The Exhibits below display the share(s) of agriculture, industry and services in the gross value added (GVA) as well as total employment for 12 selected countries in 2007.

Services constitute the largest share both in terms of gross value added and employment in each of the 12 selected countries. The share of services in gross value added ranges from 64.1% in Poland to 77.4% in France while the share of services in total employment varies more across countries – from 54.7% in Poland to 80.8% in the UK.

Agriculture constitutes the smallest share both in terms of gross value added and employment in each of the 12 selected countries. In Poland the share of agriculture in gross value added is highest (4.3%) while it is the lowest in the UK (0.7%). In terms of employment, agriculture follows the same trend with the highest share in Poland (14.7%) and the lowest in the UK (1.4%).

The share of industry in gross value added ranges from 19.6% in Greece to 33.4% in Ireland while its share in employment ranges from 16.9% in the Netherlands to 32.1% in Hungary.

These figures give an indication of the current stage of economic growth and the productivity levels across each sector in each of the selected countries. This appendix should be read in conjunction with Exhibit 13 and Exhibit 14 of the text.





Source: Credit Suisse, Eurostat

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Exhibit 35: Sectoral Contribution to GVA









Source: Credit Suisse, Eurostat







Exhibit 40: Sectoral Share in Total Employment



Source: Credit Suisse, Eurostat









References

Credit Suisse Demographics Research (2007), Global Demographic Change and Sector Implications

Credit Suisse Demographics Research (03 April 2009), A Demographic Perspective of Economic Growth

Credit Suisse Demographics Research (05 Feb2010), A Demographic Perspective of Fiscal Sustainability: Not Just the Immediate Term Matters.

Credit Suisse Research Institute Publication (January 2010), Country Indebtedness Part 1

European Commission – Eurostat, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/themes

International Labour Organization - LABORSTA Database, http://laborsta.ilo.org/.

Maddison, Angus (2001), The World Economy--A Millennial Perspective, OECD

Modigliani, F. and A. Muralidhar (2004), 'Rethinking Pension Reform', Cambridge University Press, UK

OECD Publishing (2006), Ageing and Employment Policies: Live Longer, Work Longer

OECD (2009), Pensions at a Glance: Retirement Income Systems in OECD countries.

UN Population Division (2008), World Population Prospects, http://esa.un.org/unpp/index.asp.

World Economic Outlook Database (2009), IMF

W. Rostow (1960), The Stages of Economic Growth: A Non-Communist Manifesto (Cambridge University Press)









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Disclosure Appendix

Analyst Certification

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