TROUBLING TIMES-THE GFC AND ITS IMPLICATIONS FOR REGIONAL PERFORMANCE.

PART ONE: THE UNITED STATES AND EUROPE¹

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Biographical Notes

Robert Stimson is a Professor in the faculty of Architecture, Building and Planning at the University of Melbourne in Australia, where he is the Director of the Australian Urban Research Infrastructure network (AURIN), a $20 million project funded by the Australian Government. An analytical human geographer and regional scientist, Robert Stimson has conducted research in regional economic development and planning, human spatial behavior, quality of urban life, housing, spatial disadvantage, and spatial decision support systems. He has published 48 books and monographs and more than 300 book chapters, journal papers and conference papers in these and related fields over the last 45 years. Professor Stimson is a Fellow of the Academy of the Social Sciences in Australia. Well known in regional science circles, he was one of the founders of the Australia and New Zealand Section in the mid 1990s, and is a Life member of that association. He is a Past President of RSAI and is a Fellow of

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Abstract
The Global Financial Crisis (GFC) was a profound exogenous shock which has had profound impacts the performance of national economies and the regions within them. The differential outcomes are vast. In many parts of the world there is evidence of what is being referred to as the ‘two-speed’ economy - or even a ‘multi-speed’ - economy. This has implications for regional economic development theory in which, over the last two to three decades, there has been an increasing emphasis on endogenous growth with much of the emphasis in regional policy focusing on the roles of leadership and institutional factors to harness improved capability for regions to better utilize their resource endowments. However, shocks such as the GFC change the relative influences of exogenous and endogenous processes in regional development and performance, and the ‘two-speed’/‘multi-speed’ economy phenomenon is posing a challenge for how we conceptualize and practice regional development. The contrasting empirical contexts for discussing the impacts of the GFC are the US, Europe and Australia.

JEL Classification: R11, R58
Key-words: Regional development; endogenous factors; exogenous factors; Global Financial Crisis

Introduction
As the saying goes, ‘we live in interesting times’. After a long boom, suddenly much of the world was plunged into a deep recession, referred to as the Global Financial Crisis (GFC). There remains some pessimism about a potential double-dip recession related to the current ‘European crises’. As stated by the Commission of the European Communities (2008):

“… [this] global financial and economic turbulence adds a high degree of unpredictability about the future of the world economy” (p. 3).

It is fair to say that we now live in turbulent and certainly troubling times.

For regional scientists the big questions are:

*What are the distributional, and in particular the regional, implications of the GFC?*

*Are the impacts of this exogenous shock spatially concentrated or dispersed, and at what scales is that evident?*
In the aftermath of the GFC, what can we say about the balance between exogenous and endogenous factors in regional development?

Some of these issues, and what they might mean for spatial patterns of regional economic performance, are addressed in this presentation. I refer to the increasing emphasis that has been placed on endogenous processes in regional economic development, and how it would seem that differentials in patterns of regional performance are reflecting divergence rather than convergence. I then discuss the GFC as an exogenous shock. But most of the presentation is devoted to addressing the emergence of what has been referred to as the ‘two-speed’ economy - or even ‘multi-speed’ economy - illustrating that in the very different contexts of the US, Europe and Australia.

The focus on endogenous factors in regional development and growth

A voluminous literature on the role of endogenous factors in regional development and growth has emerged over the last couple of decades. It includes numerous books from publisher Edward Elgar, including its New Horizons in Regional Science Series (see, for example: de Groot, Nijkamp and Stough, 2004; Capello and Nijkamp, 2009; Stimson, Stough and Salazar, 2009; Stimson, Stough and Nijkamp, 2011). That extensive literature has, inter alia, placed an emphasis on the roles of regional resource endowments (including human capital), market fit, entrepreneurship, innovation, networks, industry clusters, leadership, and a whole range of institutional factors.

By way of an example, Stimson et al. (2009: pp.20-24) have proposed a model framework for analyzing endogenous regional development (see Figure 1). They suggest that institutional factors, leadership and entrepreneurship act as mediating or intervening variables that may enhancing or deleterious effects on the way regions utilize their resource endowments and tap market opportunities.

This framework, along with the notion of the Regional Competitiveness Cube (RCPC) as illustrated in Figure 2, is used to show how those interactions can enhance regional performance and competitiveness.

It is evident that enhancing the role of endogenous factors is well embedded in much official regional development policy and practice, including in the European Union’s (EU) regional policy and program. For example, the intent of EU Regional Funds is to capitalize on the strengths of each territory so they can best contribute to the sustainable and balanced development of the EU as a whole. Indeed from the late 1980s it became increasingly common for policy to be focused on encouraging and sometimes facilitating regions to develop a greater capacity through self-help strategies to pursue and achieve
economic development and growth. In the context of the Stimson et al. (2009) PCPC, that would aim to set a region on a path toward the top right-hand corner of the RCPC in Figure 2.

**Figure 1: A model framework for endogenous regional development**

<table>
<thead>
<tr>
<th>Quasi-Independent Variables</th>
<th>Intervening Variables</th>
<th>Dependent Variable (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource Endowments and Market Conditions (RE,M)</td>
<td>The dynamic interrelationships that act to create the catalysis for regional development</td>
<td>OUTCOME A Region that is Competitive Entrepreneurial Sustainable (RED)</td>
</tr>
<tr>
<td>(I) Institutions</td>
<td>(E) Entrepreneurship</td>
<td>Measure and evaluation change over time. Benchmark performance (e.g. Regional shift component in shift-share analysis)</td>
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<tr>
<td>(L) Leadership</td>
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**Figure 2: The regional competitiveness performance cube (RCPC)**

Source: Stimson et al. (2009: p. 21)

It is interesting to consider factors such as institutions and leadership. Depending on the level of scale at which one is considering regional development and growth process, what might be an *endogenous*
factor at one level of scale can become an *exogenous* factor at another level of scale. For example, if one takes government and governance arrangements in the context of institutional factors, the policies and programs that are implemented at a national or state level are endogenous factors that might help shape development and influence growth at that level of scale, while at the city or local regional level they become exogenous factors.

While there has been an increasing emphasis over the last two to three decades on endogenous factors in regional growth theory and regional development practice that is not to say that regional development and growth are not influenced by *exogenous* factors. Patently they are. Such exogenous factors may range from processes such as globalization, exchange rate fluctuations, environmental/natural hazards, and other calamitous events. That includes external finance/economic shocks such as the GFC. They fall into the category of *external risks* that are discussed by Stimson, Stough and Roberts (2006). Regions need to recognize those risk factors and incorporate strategies to deal with them within their economic development plans in order to attempt to mitigate their potential impacts.

**The Global Financial Crisis**

The GFC started in the Northern Hemisphere summer of 2007. It was *not* primarily triggered by macro-economic policy. Rather it was a consequence the build-up of excessive liquidity in the world which caused over-heating and the real estate bubble in the US. Hardly recognized as a bubble when it was happening, it was brought about by the sub-prime mortgage crisis that began in 2006.

According to an *IMF Working Paper* (Claessens, Dell’Ariccia, Igan and Laeven, 2010a: p. 4) “the crisis had four features in common with other crises”, namely:

- asset price increases that turned out to be unsustainable;
- credit booms that led to excessive debt burdens;
- a build-up of marginal loans and systemic risk; and
- the failure of regulation and supervision to keep up with and get ahead of the crisis when it erupted.

In his book *The Sub-Prime Solution*, economist Robert Shiller (2009) claims that the GFC was a product of what he calls ‘oblivious fiscal attitudes’.

**Spatio-temporal spread of the GFC**

In an editorial to a special issue of the *Cambridge Journal of Regions, Economy and Society*, geographers Harry Garretsen, Michael Kitsen and Ron Martin (2009: p. 146) suggest that the GSC has
highlighted the spatial dimensions of finance. Some researchers - such as Richard O’Brien and Alisdair Keith (2009) - have argued that the GFC was facilitated by the ‘end of geography’, with ICTs and deregulated financial markets enabling rapid and complex flows of capital across the world. But if there ever was an ‘end of geography’, it has certainly been slowed by the GFC. Indeed Garretsen et al. (2009), among others, argue that:

“… globalized financial markets have intensified geography by sustaining and, in some cases, intensifying spatial differences in economic prosperity and social welfare.”(p. 146)

The crisis spread through the core economies like a contagion, moving to first to Western Europe and Japan, and then eventually to the periphery of the developing and transitional economies. The crisis deepened and its spread accelerated with the collapse of Lehman Brothers in September 2008. As discussed by Claessens et al. (2009):

- capital availability dried-up;
- risk aversion ruled;
- foreign exchange rates depreciated in many countries; and
- a contraction in global demand saw trade decline as much of the world plunged into recession.

Many emerging economies were late victims while continuing to grow, and some, such as China, avoided recession. So too did the resource exporters such as Australia and Canada, riding on the back of growth and urbanization in China and to a lesser extent in India, and their seemingly insatiable appetite for importing mining outputs.

The IMF points to four factors that were new dimensions to the GFC compared with previous crises (Claessens et al., 2010a). They were:

- “widespread use of complex and opaque financial instruments;
- “increased interconnectedness among financial markets, nationally and internationally, with the US at the core;
- “the high degree of leverage of financial institutions; and
- “a central role played by the household sector”.(p. 7)

Geographers French, Leyshon and Thrift (2009: p. 287) have argued that the GFC can “ultimately be located in four spaces”, namely:

- “international financial centres, in particular, in the longstanding competition that existed between London and New York;
“the insularity of the everyday geographies of money that have emerged in such centres in the wake of the apparent hegemony of financialization;

“the geographical recycling of surpluses and deficits and, more particularly, the structural dependency that has grown up between China and the USA; and,

“the growing power of the financial media, centred in international financial centres and an increasingly significant agent in performing money and the economy in general, and in engendering mimetic forms of rationality.” (p. 287)

Modelling the spatio-temporal spread of the GFC

A study by Wu, Ji and Su (2011) has employed spatial econometric modelling -including exploratory spatial data analysis(the core of which is a spatial autocorrelation model) - to investigate the spatio-temporal spread of the GFC across a panel of 36 countries. They looked at four phases of the GFC:

Stage 1-The latent period: from January 2006 to February 2007
Stage 2 -Local outbreaks: from March 2007 to March 2008
Stage 3 -Global financial tsunami; from April 2008 to November 2008
Stage 4-The crisis of real economies: from December 2008 to November 2009.

Wu et al. (2011) have extended the concept of space from purely physical to a socio-economic dimension. Their study developed:

- an institutional space using the Economic Freedom of the World (EFW)Index to measure consistency of a nation’s policy and its institutions: and
- a measure economic freedom compiled by the World Heritage Foundation and the Wall Street Journal.

A two-dimensional geometric plane was devised:

- the first was a government and legal system dimension; and
- the second was a freedom of exchange dimension.

These dimensions represent endogenous factors.

The analysis by Wu et al. (2009) showed that the contagion of the GFC displayed signs of dependence in both:

“…physical space and socio-economic space, with the effect being much stronger and more significant in the latter than the former.” (p. 4)
That finding indicates the spread of the GFC “followed non-physical spatial dependence” (p. 4). The analysis showed the following:

1. In the *latent period* and *local outbreak* periods (Stages 1 and 2) of the GFC there was significant spatial dependence with a cluster in North America and Western Europe. But there was no spatial dependence in the later Stages 3 (*global financial tsunami*) and 4 (*crisis of real economies*), possibly because of the main component of the crisis index is fluctuation of exchange rates, which has become intricate.

2. In Stages 1 and 2 (*latent period* and *local outbreaks*) the contagion showed significant spatial dependence in the socio-economic space, but no spatial autocorrelation was evident in Stages 3 and 4.

3. The contagion of the GFC has more significant spatial dependence in the socio-economic space compared with the physical space, confirming the hypothesis that the spread of the GFC followed non-physical spatial dependence, which confirms Mason’s (1998) notion that financial markets are subject to multiple equilibriums including financial and trade dependency.

4. It may be that the reason why China has suffered little impact might be due to some extent to its economic and political system that has effectively resisted the contagion effect of the GFC.

**Interventions**

The *IMF Working Paper* (Claessens et al., 2010a) referred to earlier discusses how there have been a number of interventions by governments in response the GFC. That has included:

- “liquidity provision through collateralized lending and other schemes;
- support for short-term wholesale funding markets;
- “[more extensive] guarantees of retail deposits and other liabilities;
- “purchases or exchanges of non-performing or illiquid assets; and
- “capital injections to banks.” (p.14)

Furthermore:

“… monetary and fiscal policy responses became even more accommodative in many countries, but did not stop the decline. Large external financial support from various sources has been necessary for several emerging markets hit by deleveraging.” (p. 14)

The amounts involved in the interventions have been massive - especially the liquidity and guarantees which in many countries amounted to double digit percentages of GDP. While overall the interventions
were necessary and largely might have had the desired effects, nonetheless there have been distortion effects that are:

- *direct*, such as supporting financial institutions in non-market ways; and
- *indirect*, such as skewing resource allocations.

As discussed by Laeven and Valencia (2008), those indirect effects can last for a long time.

**The United States**

**Prior conditions and experiences in regional development**

Even in the boom times before the onset of the GFC when the national unemployment rate had bottomed at about 4.4%, it is important to recognize that, as Mercedes Delgado, Michael Porter and Scott Stern (2010: p. 2) have explained, a “striking feature” of the US economy had been the “significant variation in regional economic performance”. Delgado et al. note that attempts to explain those variations had emphasized, *inter alia*, the roles of:

- initial conditions;
- the potential for innovation and knowledge spillovers; and
- the composition of economic activity.

Delgado et al. (2010: p. 29) conducted modelling of regional economic growth across regions in the US covering the period 1990-2005. In explaining spatial variations in regional economic development, they concluded that strong clusters - an endogenous factor - enabled greater *agglomeration economies* and *complementarities* and were associated with:

- higher regional employment growth;
- growth in existing industries and create new industries: and
- a positive spill-over effect on adjacent regions.

Clusters had thus played a “crucial role in the path of regional economic development” across US regions (Delgado et al., 2010: p. 20). This finding suggests that to be successful regional policy in the US might best prioritize complementarities across related economic activity and the leveraging of a region’s strong clusters, rather than focusing on industry attraction incentives as had often been the case in regional development policy.

**Collapse of a housing bubble: the GFC hits**
As explained in the Final Report of the Financial Crisis Inquiry Commission USA (2011), between 1978 and 2007, in the lead up to the onset of the GFC, the amount of debt held by the financial sector had increased from US$3 trillion to US$36 trillion. That represented a doubling of its share of GDP. In 2006 financial sector profits constituted 27% of all corporate profits in the US, way up from 15% in 1980. For more than 30 years public policy had focused on financial deregulation - despite the Savings and Loans Crisis of the 1980s - with a reliance on self-regulation.

There had been a massive build-up of housing-related debt in the US that fed a housing bubble. For a long time public policy had encouraged the spread of entry to home ownership, which increased from 63.7% in 1993 to 67.3% in 2008. It culminated in the sub-prime phenomenon. But as the financial crisis hit, its impact quickly spread to other parts of the larger US housing market. And it was to spill over into other financial institutions.

The Final Report of the Financial Crisis Inquiry Commission USA (2011) concluded that:

“… a combination of excessive borrowing, risky investments, and lack of transparency put the financial system on a collision course with crisis”. (p. xix)

Shiller (2008) has identified the factors contributing to the severity of the US housing bubble. They were:

- policies encouraging home ownership - even for people who arguably should not have owned homes;
- mortgage securitization that broke the link between the mortgage originator and the recipient of payments, leaving mortgage originators with no incentive to pay attention to whether borrowers would be able to repay their loans;
- financial engineering practices that allowed for extremely low interest loans - or even no interest loans - that would eventually reset at much higher rates; and
- a glut of new homes that eventually led to sharp price drops.

Shiller (2008) describes the speculative boom as a “social contagion” (p. 41) - what might be regarded as rhetoric to justify a belief that the boom would continue forever. He labels it a ‘price-story-price loop’ which was repeated as the bubble built. Shiller wrote that:

“… [the then Chair of the Federal Reserve] Greenspan, a bubble skeptic, cut interest rates. Bank regulators took a hands-off approach to real-estate lending. Risk managers at Fanny Mae and Freddie Mac discounted the possibility of steep price drops, arguing that, after all, drops of such magnitude had not occurred since the Great Depression.” (p. 46)
In short, the sub-prime debacle was the outcome of a ‘no income, no assets, no problem’ approach to financing an expanding proportion of households into home ownership, irrespective of their credit rating.

But the IMF Working Paper already referred to (Claessen et al., 2010a) puts much of the blame on three factors:

- the opaqueness of innovative but complex financial instruments;
- the public underwriting of Government Sponsored Agencies - particularly Fannie Mae and Freddie Mac - with more than 70% of non-performing mortgages; and
- the packaging of mortgage and other assets.

That resulted in:

“… a vicious cycle of rising foreclosures, falling home values and disappearing securitization markets.” (Claessen et al., 2010a: p. 10)

There was a “wave of finance company failures” that were suddenly “no longer able to securitize subprime mortgages”(p. 10). Adverse feedback loops started with house process collapsing for the first time since the Great Depression. As a result:

“… many heavily-indebted borrowers confronted with substantial negative home equity faced incentives to ‘walk away’. ” (Claessens et al., 2010a: pp. 10-11)

The policy response was a US$900 billion fiscal stimulus. But the tightening of credit standards that followed the start of the crisis led to a rapid reduction in consumer spending:

“… leading to initially localized but gradually spreading cycles of declines in corporate sector profitability, layoffs and increases in unemployment, slowing economies and more foreclosures.” (Claessens et al., 2010a: p. 11)

Shiller (2008: p. 2) contends that damage the GFC has done to the social fabric in the US is far greater that the damage done to the fiscal system. He claims it has eroded social capital and trust. As outlined in the Final Report of the Financial Crisis Inquiry Commission USA (2011: p. xv), the impact of the crisis was profound:

- more than 26 million Americans were out of work, could not find work, or had given up looking for work;
- more than 4 million families lost their home to foreclosure and a further 4.5 million were facing the prospect of foreclosure;
more that US$11 trillion in household wealth vanished and retirement accounts and life savings disappeared; and

business failures were widespread.

**Analyzing the spatial outcomes**

The spatial patterns of the housing bubble in the US, and the subsequent tumble in house prices with substantial loss of equity prices and foreclosures, has been analyzed by Kulkarni, Haynes, Stough and Paelink (2009). They developed a leading indicator of housing prices to forecast housing prices across Metropolitan Statistical Areas (MSAs) in the US by using a Google search index at the city level to predict the Case-Shiller Index which monthly tracks housing prices. Kulkarni et al. (2009) employed K-mean clustering, Kolmogorov entropy, and principal components analysis to conduct a spatio-temporal analysis of housing prices between 2001 and 2009. Figure 3 depicts the house price bubble by year and by quarter over the period which takes in the onset of the GFC.

**Figure 3: Predicting a Case-Shiller Index of house prices across**

Box Plot Showing Variation in Housing Price Index (HPI) by Year and Quarter

MSAs

Source: Kulkarni et al. (2009).

Kulkarni et al. (2009) also mapped the patterns across MSAs of the K-entropy house price index to highlight the spatial clustering of the high K-entropy distance of the house price index. They then plotted the patterns of standard deviations of MSA scores on the first principal component derived from a principal components analysis of the house price index. The resultant map (shown in Figure 4) is
particularly telling. It shows a marked spatial concentration of the bubble in relatively few MSAs, notably in:

- California and other western cities, such as Las Vegas;
- cities in southern Florida; and
- the north-east megalopolis cities.

**Figure 4: MSA Level Distribution of First Principal Component of HPI: 2001 Q1 - 2009**

Source: Kulkarni et al. (2009).

But as Shiller (2008) says, despite the differences that existed in house process across US cities in 2006 before the crisis, after the crisis hit house prices had declined in all cities, although:

“… the rate of decline is roughly inversely proportional to the spread of the increase” (p. 35).

Shiller also identifies how there were also significant differences in the decline in house prices within cities. An outcome of the GFC has been massive mortgage default and the abandonment of houses. But spatially that has been unevenly spread. Not surprisingly the higher delinquency rates have been in the metropolitan areas with a high loan orientation (Claessens et al., 2010a: p. 6), as the Kulkarni et al. (2009) analysis has shown.
Post-GFC recovery

Even now well into the post-GFC recovery - which began in the second half of 2009 - there is much caution about the performance of the US economy, with mixed results being evident. Data from the US Bureau of Economic Analysis show that across the broad regions of the US, the pattern of economic performance during and coming out of the GFC was highly variable (see Figure 5). While GDP did increase in all States in 2010, that increase ranged from a high of 5.1% in New York State to a low of 0.2% in Nevada.

**Figure 5: Annual percentage change in real GDP: US regions, 2008, 2009, 2010**

Source: US Bureau of Economic Analysis.

On the positive side, a recent *Wall Street Journal* corporate finance report points out that, in 2011:

- the cumulative sales, profits and employment among firms comprising the Standard & Poor’s 500-stock index exceeded the totals of 2007, and capital spending is up;
- the stock market Dow Jones Industrial average has rebounded to a four year high, and generally the recovery seems to be favoring the big companies; and
- there are some modest gains in manufacturing occurring in the Great Lakes states and some other parts of the ‘rust belt’.

All of that might be seen as a relatively good result, especially given the deep cost-cutting and the caution of corporates during the recovery.
However, on the negative side:

- national housing starts are still low at only about 700,000 annually (which is half what would be the normal level);
- nationally unemployment is running at 8.3%, with only 175,000 jobs being created according to the March 2012 jobs figures; and
- national GDP growth seems to be at best just under 2%, which is well under the long-term trend.

Michael Cooper (2011) reported in the *New York Times* that, according to the Brookings Institute, only 16 of the 100 largest cities in the US had regained more than half the jobs lost in the recession. But in 2011 the US had more people living in poverty than at any time since the Census Bureau started collecting data more than 100 years ago.

In *Forbes* magazine, Jon Bruner (2009) has described the post-GFC map of unemployment in the US (see Figure 6) as follows:

“… Regional economies were once described in terms of horizontal belts -the Sun Belt, the Rust Belt - but America’s current unemployment crisis is defined by vertical stripes of joblessness.”

The urban unemployment rate in 2009 ranged from a low of 5% in Omaha-Council Bluffs in Nebraska-Iowa to a high of 17% in Detroit-Warren-Livonia in Michigan, while the non-metro unemployment rate ranged from a low of 3.3% in Bismark in North Dakota to a high of 28.7% in El Centro in California.

![Figure 6: Rates of unemployment in the US, 2009 (not seasonally adjusted)](image)

There are also marked regional variations in the rate of change that is occurring in the unemployment rate across the US across MSAs and across rural regions. And there have been significant variations across industry sectors in the impact of the GFC on job losses, with the highest initial unemployment insurance claims filed in both 2010 and 2011 being in the leisure and hospitality, construction, and trade, transport and utilities industry sectors.

**Europe**

**Reflecting on EU regional policy and performance: Convergence or divergence?**

Saul Estrin (2009) from the London School of Economics makes the telling point that the ability of an economy to weather a crisis depends on:

- the condition of the economy when the storm hits;
- the policies adopted in response to the crisis; and
- how long the storm lasts.

What of the pre-GFC conditions in the EU?

In general labour markets in Europe had long been characterized by:

- persistent relatively high unemployment;
- low and slow employment growth; and
- lower levels of productivity than in the US.

The Commission on European Communities (2008) has noted that:

“… Regional disparities in economic output and income in the European Union are far more extreme than in similar economies such as the US and Japan, particularly following recent enlargements. The richest regions are eight times richer than the poorest regions.” (p. 4)

The issue of *regional convergence* in Europe is a topic on which there has been much written. For example, Petrakos, Kallioras and Anagnostou (2011) found that, across the NUTS-2 regions of the EU over the period 1990-2003:

“… *regional divergence factors*\(^2\) [were] getting stronger, and, eventually, dominate[d] at more advanced levels of development.” (p. 375)

However, they note that:

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\(^2\)My emphasis.
“… On the basis of a regional growth model, factors such as agglomeration economies, geography, economic integration and economic structure seem to create an overall unfavourable economic environment for lagging (and, possibly, less favoured) regions. Such an environment generates dilemmas and questions concerning the mix of policies that may promote growth and at the same time reduce regional inequalities in the European Union.” (p. 375)

Blazek and Netrodova (2012) note that while there has been a tendency towards convergence in all the member states of the EU (and of Central and Eastern Europe) at both the EU-3 and LAU-1 levels, the range of variation has increased throughout, except at the LAU-1 level in Hungary. They refer to:

“… the ambiguous nature of the relationship between an economic crisis and the intensity of micro-regional differences or, rather, their dependence, owing to the nature and severity of the [financial] crisis as well as the statistical measures of variability.” (p.4 2)

The European Commission has described the purpose of its Regional Policy as being:

“… to reduce the significant economic, social and territorial disparities that still exist between Europe's regions. Leaving these disparities in place would undermine some of the cornerstones of the EU, including its large single market and its currency, the euro.”(European Commission web site)

It seeks to do that via the so-called ‘convergence process’. The policy reflects a view that redistribution between ‘richer’ and ‘poorer’ regions is needed to balance the effects of economic integration and the expansion of that integration. But according to Estrin (2009), that process had begun at very different levels and it has been heterogeneous.

For the new EU member states, GDP per capita had slowly but steadily increased from 1993 to 2008 to reach about 50% of the E-15 average. But research conducted by Constantin, Goschin and Dragan (2011) undertaken prior to the onset of the GFC shows that regional disparities had actually significantly increased since the 2004 and 2007 accession waves that added to the membership of the EU. The magnitude of the disparities is illustrated in Table 1 Thus it appears that divergence rather than convergence was a predominant outcome.
Table 1: Disparities between EU regions: Regional GDP per capita in the EU-27 in 2004 (in PPS, EU27=100)

<table>
<thead>
<tr>
<th>The 15 highest regions</th>
<th>The 15 lowest regions</th>
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</thead>
<tbody>
<tr>
<td><strong>1</strong> Inner London (UK)</td>
<td>303</td>
</tr>
<tr>
<td><strong>2</strong> Luxembourg (LU)</td>
<td>251</td>
</tr>
<tr>
<td><strong>3</strong> Bruxelles Cap (BE)</td>
<td>248</td>
</tr>
<tr>
<td><strong>4</strong> Hamburg (DE)</td>
<td>195</td>
</tr>
<tr>
<td><strong>5</strong> Wien (AT)</td>
<td>180</td>
</tr>
<tr>
<td><strong>6</strong> Ile de France (FR)</td>
<td>175</td>
</tr>
<tr>
<td><strong>7</strong> Berkshire, Buckinghsmdhire, Oxfordshire (UK)</td>
<td>174</td>
</tr>
<tr>
<td><strong>8</strong> Oberbayern (DE)</td>
<td>169</td>
</tr>
<tr>
<td><strong>9</strong> Stockholm (SE)</td>
<td>166</td>
</tr>
<tr>
<td><strong>10</strong> Utrecht (NL)</td>
<td>158</td>
</tr>
<tr>
<td><strong>11</strong> Darmstadt (DE)</td>
<td>157</td>
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<tr>
<td><strong>12</strong> Praha (CZ)</td>
<td>157</td>
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<tr>
<td><strong>13</strong> Southern &amp; Eastern (IE)</td>
<td>157</td>
</tr>
<tr>
<td><strong>14</strong> Bremen (DE)</td>
<td>156</td>
</tr>
<tr>
<td><strong>15</strong> North Eastern Scotland (UK)</td>
<td>154</td>
</tr>
</tbody>
</table>


It is thus not surprising that in the EU regional policy and programs have become extremely prominent and are central to the Cohesion Policy. They account for as much as one-third of the EU budget. For the period 2007-2013, the EU Cohesion Fund was to focus particularly on Bulgaria, Cyprus, the Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia and Slovenia. Spain was eligible to a phase-out fund only as its GNI per inhabitant was less than the average of the EU-15.

**Spread of the GFC to Europe**

As discussed in the *IMF Working Paper* referred to earlier (Claessens et al., 2010a), when the GFC spread from the US to Europe, the heavy and widespread involvement of financial institutions in leveraging associated with the securitization of the sub-prime mortgages saw an unraveling in this “complicated inter-connected but opaque web of financial integration” triggering “liquidity pressures, a sell-off in equities, and the depletion of capital” (p. 8).

At first the spill-over from the US was to European banks with direct exposure; but rapidly that spread widely throughout the banking system. There was a second phase of the spill-over through asset markets. The overall result was large losses and the writing down of illiquid securities. The Lehman
Brothers collapse triggered further insolvency concerns with massive sell-offs threatening financial meltdown. Everything was compounded by deficiencies in resolution frameworks that have been described as “haphazard” (Claessens et al., 2010a: p. 13). In Europe there had also been a sharp increase in household debt-to-income ratios - particularly marked in UK, Ireland and Spain - as household credit expanded rapidly and house price inflation occurred. When the crisis spread to Europe, high leveraging had created vulnerabilities which turned into a decline in real estate prices. That was to have severe social repercussions as households - and also firms - had to restructure debt.

**Differential spatial impacts**

When a shock like the GFC hit Europe, it could be expected that the differential spatial impacts would be marked. For example, it might have been expected that for countries and regions that were integrated into the European production and trade system the shock would be amplified in the short-run. As Estrin (2009) points out, countries with large foreign and structural public sector indebtedness, and indeed countries with fragile political and institutional structures, could be expected to have more limited capacity for undertaking intervention strategies. Similarly, countries with lower levels of pre-crisis convergence might be expected to struggle more post-crisis - a reality that is well and truly now evident vis a vis Greece, Spain, Portugal, etc., in the on-going European crisis. For the transitional economies, it may be that renewed progress towards convergence will be difficult or even be reversed. The spatial impacts of the GFC in Europe have indeed been heterogeneous, across both countries and regions as a number of studies have revealed (see, for example, Lane and Milesi-Ferretti, 2010; Rose and Spiegel, 2010; Claessens, Dell’Ariccia, Igan and Laeven, 2010b; Groot, Mohlmann, Garretsen and de Groot, 2011).

The overall employment rate in the EU-27 nations had dropped to 69.1% in 2009, well below the 75% target that policy had been set for 2020. At the spatially disaggregated level of the NUTS-2 regions, in 2009 only 74 regions had already achieved the 75% target, while 64 regions were 10% or more points below that target. The lowest employment rates were in regions in the south of Spain, the south of Italy, Greece, Poland, Hungary, Bulgaria, Romania and Malta (Eurostat, 2011). In 2009 the overall unemployment rate in the EU-27 had increased to 8.9% as the impact of the GFC virtually wiped out the decline in unemployment that had occurred between 2004 and 2008. By 2009 the unemployment rate across NUTS-3 regions ranged from 1.3% in Romania to 29.2% in Spain. More than 20% of the NUTS-3 regions had double-digit unemployment rates, while a further 20% of the
regions had a rate of less than 5%. As shown in Figure 7, spatial differences in the levels of unemployment were overall not particularly marked within countries, except in Germany, Italy, Greece, France and Poland where there marked regional differences were evident (Eurostat, 2011).

Figure 7: EU NUTS-3 regions unemployment rates, 2009

![Figure 7](image)


The differential economic impact of the GFC is reflected in the pattern of change in regional unemployment rates across the EU NUTS-2 regions between 2005 and 2009 (see Figure 8):

“… Unemployment rates fell significantly in … all the Polish regions, in regions in the centre and north-east of Germany, in Slovakia and in Bulgaria … By contrast, unemployment rates increased by more than 10 percentage points in regions in the south of Spain. To a lesser extent, unemployment rates also increased in the other regions in Spain, in the three Baltic States and in some regions in Ireland, the United Kingdom and Hungary.” (Eurostat, 2009)

By March 2012, unemployment in the Euro zone had continued to increase to reach 10.8%. There were contractions in manufacturing from the Mediterranean periphery nations to the core of Germany and The Netherlands. In the periphery countries in particular, economic performance remained especially weak. Such indicators are driving some commentators - including the IMF - to question the potential detrimental impact of austerity measures to curb government deficits in the near term when what might be needed are measures to stimulate growth.
Factors associated with the heterogeneous spatial impact of the GFC across the EU

A study Lane and Milesi-Ferretti (2010) found that the severity of the GFC has been a function (among other things) of the openness of countries and their prior fiscal situation. Another study by Groot et al. (2011) conducted modelling to ascertain the explicit impacts of:

- openness, or the extent to which countries are integrated in the global economy via financial and trade linkages;
- differences in the institutional framework of countries; and
- differences in the sectoral composition of countries and regions

in explaining regional variations across the EU in the impact of the GFC. Sectoral composition was found to be especially important.

For the EU-27 as a whole, “real GDP decreased by 5.3% between the first quarter of 2008 and the second quarter of 2009: roughly a set back to the 2006 level” (Groot et al., 2011: p. 3). But the heterogeneity of the impact of the GFC was marked, as illustrated in Figure 9.

Groot et al. (2011) point out that:

“… Not only do European countries differ substantially as to how severe they were hit by the crisis, but there is also considerable heterogeneity in the ratio of the change in GDP and the change in unemployment.” (p. 4)

That is shown in Figure 10.
In terms of uneven distributional impacts:

- younger workers aged 25-54 years were twice as susceptible to becoming unemployed;
- those in temporary work were more likely to lose their job (for example, in Spain they accounted for 85% of the increase in unemployment; and
- workers employed in industries more sensitive to the business cycle were more likely to become unemployed.

**Figure 9: Spatial heterogeneity in the effects of the crisis in EU-27: change (in %) of GDP relative to the pre-crisis level**

![Spatial heterogeneity in the effects of the crisis in EU-27](image)

Source: Groot et al. (2011: p. 4); Eurostat, Quarterly National Accounts statistics, December 2010.

**Figure 10: Relationship between change in GDP and change in unemployment**

![Relationship between change in GDP and change in unemployment](image)

Source: Groot et al. (2011: p. 5).
The modelling conducted by Groot et al. (2011) across the EU-27 countries explicitly investigated:

- the relevance of financial transmission channels on the country impacts of the GFC in the EU-27;
- the effect of international trade linkages on the impact of the GFC;
- the effect of changes in real labour costs (the ratio between GDP and real labour costs) prior to the onset of the GFC;
- the effect of 13 institutional factors and the change in GDP and in unemployment in the with the impact of the GFC compared to pre-conditions; and
- industry sectoral composition effects- which can be complex and are associated with the interplay between demand and supply factors, comparative/competitive advantage and specialization factors, labour market institutions, and path dependencies -that are likely to have variable sensitivities to business cycles and exogenous events such as the GFC.

From their modelling Groot et al. (2011: pp. 23-24) were able to draw the following overall conclusions about the spatially heterogeneous impact of the GFC and the subsequent recession across EU countries and regions:

1. One of the best pre-crisis predictors is the change in the ratio between GDP and labour costs per hour prior to the crisis.
2. There is no strong relationship between the severity of the crisis and financial linkages and trade.
3. There is limited evidence on the role played by institutional factors, although:
   - a high incidence of trade union membership has some affect on higher reductions in GDP but not on higher unemployment, and
   - a higher level of government debt is associated with a less severe reduction in GDP and lesser increase in unemployment.
4. The sectoral composition of an economy does have a clear effect on the impact of the crisis, both for countries and for regions, with higher shares of cyclical sensitive sectors being associated with a deeper crisis.

Groot et al, (2011) also conducted an analysis to test the sensitivity of structural factors in the impact of the GFC at the more disaggregated level of the EU NUTS-2 level regions. They found that:

“…The regions with the highest estimated sensitivity are Southern and Eastern Ireland (1.20), Franche-Comté, France (1.15) and Småland med öarna, Sweden (1.15). The least sensitive
regions are Groningen, Netherlands (0.43), Nord-Norge, Norway (0.51) and Hedmark og Oppland, Norway (0.51).” (Groot et al., 2011:p. 20-21)

Even though the data used at the NUTS-2 level are incomplete (restricted to nine countries), their modelling reveals that:

“… there seems to be a relationship between the growth in 2009 and the sensitivity based on the sectoral composition: a higher sectoral sensitivity goes along with a larger decrease in 2009 GDP regional growth.” (p. 22)

A regression analysis indicated that:

“… there appears to be a quite strong relationship between the business cycle sensitivity of the region and the GDP growth in 2009: regions with more sensitive sectors experience a stronger growth decline in 2009. The sensitivity explains about 19% (excluding Groningen) of the variation in GDP growth. An increase of one unit of sensitivity is expected to coincide with 4.33 percent less GDP growth.” (Groot et al. 2011, p. 23)

Groot et al. (2011) thus suggest that the sectoral heterogeneity of regions would imply that there is a need for different responses to the GFC, with a differentiation of policy by place and not a ‘one size fits all’ policy approach.

Policy considerations and what lies ahead

As discussed by Robert Shelburne (2009) from the UN Economic Commission for Europe:

“… The crisis has created new political tensions within the European Union. In a number of cases countries being subject to new or especially stressful developments requested changes in existing EU agreements or requested its domestic industries to provide some national preference.” (p. 18)

A report by the Commission of the European Communities (2008) says the “key cohesion challenge” for the EU will continue to be “the integration and convergence of the New Member States” (p. 4). But the empirical evidence seems to demonstrate that divergence is more the trend that convergence. And the GFC may have strengthened that trend.

Balazs Horvath (2009) from the UNDP Bratislava Regional Centre says that for Europe and the CIS region:

“…falling incomes, disappearing capital inflows, and binding budgetary constraints are set to reverse a decade of progress towards meeting the Millennium Development Goals.” (p. 13)
It will take a long time for employment and real wages to recover post-GFC. For a number of countries and for many regions, Horvath says that the on-going European crisis is likely to:

- severely impact low skill workers;
- push poor households into a vicious cycle of poverty undermining future income-earning potential; and
- cause rising crime rates.

In a UNDP report, Dabrowski (2009) has warned that in general responses to the GFC needed to avoid a return to protectionism, expand the public sector, and discourage rent-seeking behaviours. Many countries need to return to pursuing structural and institutional reforms. Financial supervision needed to be overhauled, The Doha trade liberalization round needed to be brought to a conclusion. But Dabrowski (2009) also points to the different situations of the core and the periphery countries:

1. For the **core**, the crucial questions are:
   - how far to go with monetary expansion;
   - how to withdraw the monetary stimulus as the risk of deflation gives way to the risk of inflation or stagflation; and
   - how to deal with bad assets that have been accumulated by some central banks in pursuing quantitative easing.

2. For the **periphery**, the challenges include how to deal with:
   - the implications of depreciating currencies associated with capital outflows;
   - the potential of default from excessive fiscal easing;
   - avoiding sliding into protectionist responses;
   - the potential of fiscal stimulus crowding-out private sector investment; and
   - the implications of rapid ageing population.

Both the core and the periphery economies are now facing strong fiscal constraints as the European crisis has deepened. And an additional over-riding concern is what will be the sources of new productivity gains?

There are a number of key questions underlying the intent of the EU Regional Funds:

1. How to capitalize on the strengths of each territory so they can best contribute to the sustainable and balanced development of the EU as a whole? That reflects an emphasis on endogenous processes.
2. How to manage concentration? Cities have both positive and negative impacts - intensifying innovation and productivity at the same time as pollution and social exclusion. That reflects the recognition of the power of agglomeration forces.
3. How to better connect territories through access to public services, efficient transport, reliable energy networks, and broadband internet.
4. The effects of climate change and traffic congestion do not stop at traditional administrative borders, so what kinds of new forms of cooperation are needed between countries and regions?

In its *Regions 2020 Report* (Commission of the European Communities, 2008: pp. 3-4) highlights the four great challenges facing the EU, namely:

- globalization;
- demographic change;
- climate change; and
- sustainable and competitive energy.

The report refers to both the opportunities and the challenges posed by globalization for regions, and particularly the structural adjustments it tends bring both directly and indirectly on both firms and regions.

The Commission has created a *globalization vulnerability index*, a combination of projected levels of future labour productivity growth, employment and education which ranks European regions. It shows that:

- many regions in the north-west periphery of the EU seem to be in a favourable position;
- most regions in southern and eastern parts of the EU are much more exposed to the challenges of globalization;
- there is no clear pattern in western and central Europe, with sub-national variations evident; and
- at the sub-national level, major urban centres and metropolitan areas should be better placed to meet the challenges of globalization, which is an indication the power of agglomeration forces.

(Commission of the European Communities, 2008: p. 6)

The Commission of the European Communities (2008:pp. 8-11) draws attention to the great diversity across the EU regions with respect to demographic change, in particular the effects of an ageing population, declining fertility, and a shrinking work force, despite growth in world migration flows.

The Commission has also produced a *demographic vulnerability index* which shows that:
• the diversity of demographic dynamics and patterns across the EU is great, with exposed regions spread across the EU;
• between 2005 and 2020 about one-third of EU regions are projected to experience decline, especially in central Europe, Eastern Germany, Southern Europe and northern Spain;
• the highest shares of old age populations will occur in eastern Europe, north-west Spain, Italy, and parts of Finland; and
• the share of the working age population will be particularly low in several Finish, Swedish and German regions.

The Commission of the European Communities (2008) has produced a ‘synthetic index’ of the four challenges referred to above, with a map displaying the ‘risk intensity’ for regions across the EU. The Commission’s report notes that:

“…Most regions expected to be intensively affected by three or more challenges at the same time are located in Southern Europe and on the coasts of Western and Central Europe. Regions with a lower number of simultaneous challenges are relatively close to the geographical core of the EU, but are also located in Southern Spain, the UK, Ireland, Denmark, Sweden, Finland and Lithuania.” (p. 19)

These significant risk factors will become central to EU Regional Policy which is a key mechanism for the Europe 2020 strategy that emphasizes the development of a ‘smart, sustainable and inclusive’ Europe, According to the European Commission’s fifth report on economic, social and territorial cohesion (Investing in Europe’s Future, 2010), innovation needs to be a main driver of regional development across the diverse regions of the EU. It is suggested that to achieve the objectives of the Europe 2020 strategy, there needs to be a combined approach to building human capital, social and economic development with investments in innovation and transport infrastructure. The emphasis thus continues to be on an endogenous approach to regional development.

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