Chapter 3
The Service Sector in the New Globalization Phase: Evidence from European Regions

Roberta Capello and Ugo Fratesi

1 Introduction

Qualitative rather than quantitative changes have characterized the reshaping of the global economy over the past decade. The globalization of production no longer only involves the off-shoring and outsourcing of production phases in developing countries; it no longer simply affects the division of labour between emerging and advanced countries and developed and developing economies; and it is no longer confined to manufacturing activities (Baldwin, 2006).

The globalization of tasks rather than sectors, the off-shoring and outsourcing of service functions, de-industrialization in favour of services, and the decentralization of intertwined functions (manufacturing and related services) are reshaping the division of labour in the sub-national economies of advanced countries, and regional economies are increasingly competing to seize the opportunities which these new trends offer (Capello, Fratesi, & Resmini, 2011; Fontagné & Lorenzi, 2005).

All these changes affect the service sector. It is from the service sector that most outsourcing of tasks, rather than of whole functions, takes place; it is the service sector that is the most engaged in the off-shoring of functions; it is in the service sector where jobs, and productivity, are most affected by the new globalization trends. Most of the challenges and growth opportunities related to globalization trends are expected to be related to the presence of the service sector in the economy.

The aim of the chapter is to analyse the relationship between the trend of the service sector in European regions and the existence of globalization conditions. This aim is achieved in a purely descriptive way by analysing the economic trend of macro sectors and the regional degree of openness to the external world.

This chapter first presents the recent qualitative changes that have taken place in the service sectors of advanced economies (Sect. 2). Secondly, the analysis concentrates on productivity, employment and GDP dynamics in European regional

R. Capello (✉) • U. Fratesi
ABC Department, Politecnico di Milano, Milan, Italy

J.R. Cuadrado-Roura (ed.), *Service Industries and Regions*,
Advances in Spatial Science, DOI 10.1007/978-3-642-35801-2_3,

economies, and descriptively links these trends to different regional globalization conditions (Sect. 3) by grouping regions according to their degree of globalization with a methodology already suggested by the authors in a previous study (Capello et al., 2011). Moreover, the different regional performances are associated with service specialization so as to describe whether virtuous growth rates are linked to specific service rather than manufacturing specialization (Sect. 4). Some concluding remarks on the importance of the service sector in a period of new spatial globalization patterns are made in Sect. 5.

2 New Globalization Trends in the Service Sector

2.1 Deindustrialization and the Rising of Service Economy

Globalization is generally associated with deindustrialization. In advanced countries, and in regions specialized in manufacturing, the new forms of production organization adopted by firms entail a shift of functions and tasks outside the area, with the expected consequence of job losses in industrial employment and, at the same time, productivity increases in the manufacturing sector.

Deindustrialization is too often a process defined only in terms of industrial employment losses. Yet purely industrial employment decrease is not enough to identify a deindustrialization process, which takes place when industrial employment losses are associated with industrial productivity losses, and with a real industrial GVA decline. While strategies of outsourcing and off-shoring easily impact on employment by eliminating some blue-collar activities in the traditional industrial regions of advanced countries, their effects on industrial productivity are contradictory. It may be the case that industrial productivity increases due to the dropping of inefficient functions and tasks, or due to the region's specialization in higher value-added functions. However, this latter process must be efficient enough to guarantee an increase in industrial GVA at the local level (Affuso, Capello, & Fratesi, 2011; Camagni, 1991).

In coping with these processes, regional economies must strike an important balance through the spatial reorganization of production; the losses in industrial employment must be counterbalanced locally by a more than proportional increase in industrial productivity so as to guarantee at the same time an increase in real industrial GVA. Achievement of this goal depends on the capacity of regional economies to re-orient their specialization to new-growth industries and activities in related sectors. Examples of such transitions include the switch from telephone handset production to mobile internet system design, or from vehicle production to GPS, road sensing and safety equipment (OECD, 2007). Industrial regions endowed with command and control and creative functions are probably those best able to exploit this globalization trend.

More importantly, in a period of the rapid service fragmentation of production, a shift to the service sector has been highlighted as a possible counterbalance to industrial employment losses. An OECD Report (2007) shows that, between 1998 and 2004, most regions experienced large job losses in manufacturing and that these job losses were usually, although not always, offset by growth in service employment (OECD, 2007). This substitution process between industry and service employment represents a challenge and a possible threat for regional economies, because it imposes the search for a balance between industry and service employment. In fact, major effects on the real local economy are registered when the new service jobs are high-value added jobs, generally in "producer services" (working for industries from outside). On the other hand, when regional specialization shifts towards low-value added services, mainly in "consumer-oriented" activities or "low-profile functions" (e.g. call centres), the net advantage for the regional economy may be limited or even negative. At least part of the present slowdown of aggregate productivity growth in advanced countries is linked to a trend of this kind.

Moreover, service activities (both low and high-value added functions) exhibit a slower pace in innovation trends than manufacturing does. This element represents another challenge associated with the move towards service activities, which imposes a slower innovation pace on local economies specialized in services compared with those specialized in manufacturing, with a consequent reduction in productivity increases. Regional economies are obliged to strike a balance between industrial and service sectors so as to maintain a certain rate of innovation and productivity. The mere quantitative substitution between numbers of jobs lost and re-created is a dangerous strategy: high-quality skilled jobs must be protected in order to achieve productivity gains.

2.2 Off-Shoring and Outsourcing of Service Functions

New globalisation trends are reflected in the new spatial trends of FDI. Most of these investments are directed to developed countries (80 % in 1986–1990, around 60 % in 1993–1997, and 65 % more recently in 2006), and they seem particularly attracted by accelerations in economic integration processes: in fact, EU15 countries, at the end of the process of creation of the Single Market in 1991–1992, received up to 50 % of world FDI, and similar accelerations were evident in the case of Eastern European countries after their accession.

Moreover, since 1990 services have accounted for the majority of total FDI; in 2005 they accounted for almost two thirds of the total, while manufacturing represented 30 % and primary sectors less than 10 %. Services still maintain a large share of greenfield FDI (42 % in 2006, with manufacturing accounting for 54 %), and greenfield FDI representing one-third of total FDI.

The world's inward stock of services quadrupled between 1990 and 2002, from an estimated 950 billion US dollars to over 4 trillion US dollars (UNCTAD, 2004). This explosion was certainly linked to the liberalization of FDI policies, which

began in the mid-1980s and gathered momentum during the 1990s. This process has had important consequences if one considers that services constitute the largest productive sector in most economies, and that their competitive (and efficient) production is crucial for the welfare of a society as a whole.

The growth of service FDI has gone hand in hand with the industry mix of such FDI (Golub, 2009). Until the 1990s, services FDI were concentrated in trade and finance, accounting for 25 % and 40 %, respectively, of total inward FDI stock in services (UNCTAD, 2004). Since the 1990s, other services have undergone more dynamic FDI growth, among them telecommunications and electricity, water supply and business services. This increasing tendency to off-shore services is likely to be a major trend in the next few years if one considers that service off-shoring is, compared to manufacturing off-shoring, simpler in terms of resources, space and equipment requirements, and may therefore be more 'footloose' given the lower sunk costs involved. It affects firms in all sectors, and may therefore have greater implications for the host economy than the fragmentation of manufacturing. It mainly affects white-collar workers, while manufacturing off-shoring primarily involves blue-collar workers and generally creates jobs of this latter kind in the host area without destroying them in the home area.

This change of service mix also reflects the different reasons for off-shoring (Davies & Guillin, 2011; Riedl, 2008). Finance and retail trading used to be the traditional host-country market-oriented services; today, more complex strategies are put in place in order to obtain efficiency gains based on an inter-affiliate division of labour whereby foreign affiliates produce components not necessary for their parent firms but for other affiliates specialized in other components. Therefore apparent in services as well is the breaking up of service activities into components produced wherever it is more convenient to do so, with the result that certain foreign affiliates perform back-office functions of various kinds for their parent company, or for other foreign affiliates.

Whilst in Europe 45 % of the largest firms with off-shoring experience have off-shored activities to their foreign affiliates, 48 % of the companies have outsourced activities to third-party service providers (Lejour, 2007; UNCTAD, 2004), which evidence that the phenomenon of service outsourcing is also common. The choice between off-shoring and outsourcing service activities in favour of the former depends primarily on the need to maintain strict control on those activities. For example, the financial service industry appears to rely almost exclusively on internalized models of off-shoring. Moreover, off-shoring is preferred when the level of internal interaction with other functions matters. Service, manufacturing and R&D activities require strong interaction if the firm is to be efficient; by contrast, back-office functions and customer interaction services can be easily outsourced. Out-sourcing, in any case, is strongly conditional on the existence of capable local firms; there are several examples of cases in which off-shoring has been chosen because of the lack of efficient and reliable local companies in the host country.

The global shift in services offers large potential benefits for regions at both ends of the process: receiving countries gain jobs, skills, access to foreign skills; while the sending ones improve their competitiveness by moving to higher-level activities.

Since most off-shoring and outsourcing has taken place among developed countries, this underscores that this process does not primarily represent a "North/South" divide, and that it mainly affects regional economies in developed countries.

It is clear from what has been said that the service sector plays an important role in local economies specialized in service activities. For these economies, the service sector is a source of structural changes brought about by the new globalization trends; but for those regions able to adjust their economies to the structural changes, it offers great opportunities of growth.

A descriptive analysis of the major economic growth measurement, namely productivity, employment and GVA trends, is presented in the chapter, so as to highlight whether it is true that in regions with higher involvement in the globalization process the service sector has demonstrated a different economic performance. Before entering the descriptive analysis, the logic with which "open regions" are classified is now presented in detail.

3 Economic Performance in the Service Sector: Global vs. Local Regions

3.1 Measuring Globalization at Regional Level

The aim of this part is to build a typology of European regions according to their degrees of exposure to globalization; in particular, three different groups of European regions identified in Capello et al. (2011) and Fratesi (2012) according to:

- An economic dimension, measured in terms of regional specialization in open (through international trade and FDI) growing sectors; and
- A functional/territorial dimension, measured through higher-than-average scores in a globalization index based on structural—urban—material and non-material connectivity indicators.

Measuring the involvement in globalization is, in fact, a difficult task, because globalization involves a large number of processes which take place simultaneously and are related to each other. It is especially difficult to capture it at regional level owing to the low availability of data: for most other indicators, especially trade, while regional data are missing or are available for only a small sub-set of European countries. Moreover, the regional dimension of globalization cannot be captured by flow variables alone (FDI, trade, and migration flows all belong to this category) since the structure of the regional economy is fundamental for explaining the role that a region can play in the global economy and what flows it is able to attract. Since the only reliable data available at EU-27-wide NUTS 2 regional level are those on FDI flows (see Resmini, 2013, in this volume), the lack of direct statistical sources entails that an indirect method must be used to measure globalization.

Table 3.1 Taxonomy of regions according to their degree of integration into global markets

	Functional/territorial dimension	
Economic dimension	Openness above average	Openness below average
Specialization in open growing sectors	1 Global players	2 Regional players
De-specialization in open growing sectors	4 Pure gateways	3 Local players

Source: Capello et al. (2011)

In particular, the approach is based on two main dimensions that reinforce and complement each other in capturing the different aspects of integration. They derive from two main streams of literature: the first oriented to the territorial/functional structure of the local economy in order to capture integration processes, the second to economic integration processes. The former strand of analysis identifies the competitive advantages of regions undergoing global processes in the presence of a large city in which the international headquarters of multinationals, high-value service functions (like international-level finance and insurance), and high-qualified human capital attracted from outside find an efficient location thanks to agglomeration externalities and physical accessibility. The feature shared by all these concepts is the idea that one way to be integrated into the global economy, and to gain advantages from it, is to comprise international high-value functions, qualified human capital, increasing returns to production activities, and physical accessibility. The second strand of analysis with which to measure a local economy's degree of integration into the world market is a pure economic dimension captured by the degree of that local economy's specialization in activities that are particularly open to international markets. This dimension explains the capacity of a region to grow by virtue of the presence in it of dynamic open sectors. It captures a MIX effect of a traditional shift-share analysis (Perloff, 1957; Perloff et al., 1960).

Only those regions well endowed with physical connections and possessing the appropriate specialization in competitive and dynamic sectors have the potential to be *global players*, these being defined as *regions where globalization's impact is felt first and most strongly*.

Table 3.1 contains the conceptual taxonomy obtained if the two dimensions of integration into global markets—the territorial/functional and the economic dimensions—are cross-referenced: on the vertical axis is the degree of openness to globalization, i.e. a *globalisation index*; on the horizontal axis the *regional specialization in open growing sectors* (belonging either to services or manufacturing).

The territorial/functional dimension (vertical axis) requires a synthetic indicator for the openness of regions, which affects their participation in global networks. The economic dimension (horizontal axis), in the absence of trade data at regional level, requires identification of the degree of specialization in open growing sectors of each region. This horizontal dimension is therefore the result of a two-step procedure which first identifies those sectors which are more open at European level, and then identifies the regions which are specialized in them.

A synthetic indicator was constructed to capture the various components that define structural openness to globalization; in fact, there exist a number of

indicators, not statistically independent from each other but normally positively correlated one another. The synthetic indicator was built using a principal component analysis (PCA) on five available relevant indicators. Each of these indicators captured a different element in the functional/territorial integration of European regions with the extra-European world and economy. The five indicators were:

- Extra-European born population, as a proxy for the attraction of foreign labour;
- Extra-European airflow connections, bound to represent the integration of a region with global networks;
- Number of offices of advanced services firms, expected to capture the presence of value-added functions;
- Headquarters of transnational corporations, as a proxy for the attraction of international high-value functions;
- Extra-European FDI in the region, representing the attraction of extra-European capital.

The second dimension of the external openness of regions is their industrial specialization. In fact, being specialized in sectors which are relatively more open to trade and perform better than average in periods of sustained globalization is an important channel through which regions can take advantage of globalization trends. By contrast, specialization in closed and/or declining sectors makes a region less able to play a role in globalization processes, and hence to take advantage of external opportunities.

Regional sectoral trade data would be extremely useful here. However, given the lack of sectoral trade data at regional level for all EU countries, sectorally open regions had to be identified by means of a two-step procedure. As in a traditional shift-share analysis (Perloff et al., 1960), in fact, regional specialization in more dynamic sectors is a factor which, ceteris paribus, enables regions to benefit from the global processes of which the same sectors are the principal beneficiaries. The first step is therefore to determine which sectors are the open and growing ones; and the second step is to determine which regions are specialized (i.e. have a location quotient higher than 1) in those sectors.

Since pure gateways, which are theoretically puzzling, do not exist empirically (Capello et al., 2011; Fratesi, 2012) three groups of European regions (NUTS 2 level) were identified in this way, and are presented in order of involvement in global flows, namely:

1. Global players. These are regions at the core of globalization processes: they are structurally open and have all the necessary physical and functional linkages with the rest of the world; moreover, they are specialized in sectors which are open and growing, so that their role in world trade flows and FDI attractiveness is maximum. These regions are therefore expected to be able to lead Europe and drive patterns of response to globalization also for the other regions of the EU.
2. Regional players. These regions are specialized in open growing sectors but have below-average physical and functional connectedness with other areas in the world. These regions are therefore expected to take advantage of their specialization,

but they are also expected to be somewhat penalised with respect to global regions because their good sectoral mix does not take advantage of a strong and efficient territorial settlement structure, and does not exploit the agglomeration advantages guaranteed by a city-region. The economic dynamics of these areas are expected to be due to a MIX effect deriving from the presence in the region of sectors that are more dynamic and more open than average at regional level because of increasing demand in those sectors. The label "regional" is attached to these players because their sectoral specialization would allow them to play a worldwide role, but, given their lack of an urbanised settlement structure, they normally have to resort to global regions as gateways to world markets. The term "regional" is hence to be understood in its trade literature meaning, which interprets Europe as a region of the world. At the same time, the term recalls the limited physical accessibility to and from the world.

3. Local players. This category consists of regions which have neither the functional/territorial elements to connect with the world nor the appropriate specialization in open growing sectors. These regions are rather peripheral to globalization processes and will hence be used as a control category by all the analyses conducted in the following chapters. Trends that pertain to globalization forces are expected to be limited in this category. We label them "local" players because their markets are expected to be local, i.e. normally limited to their own region and, possibly, country.

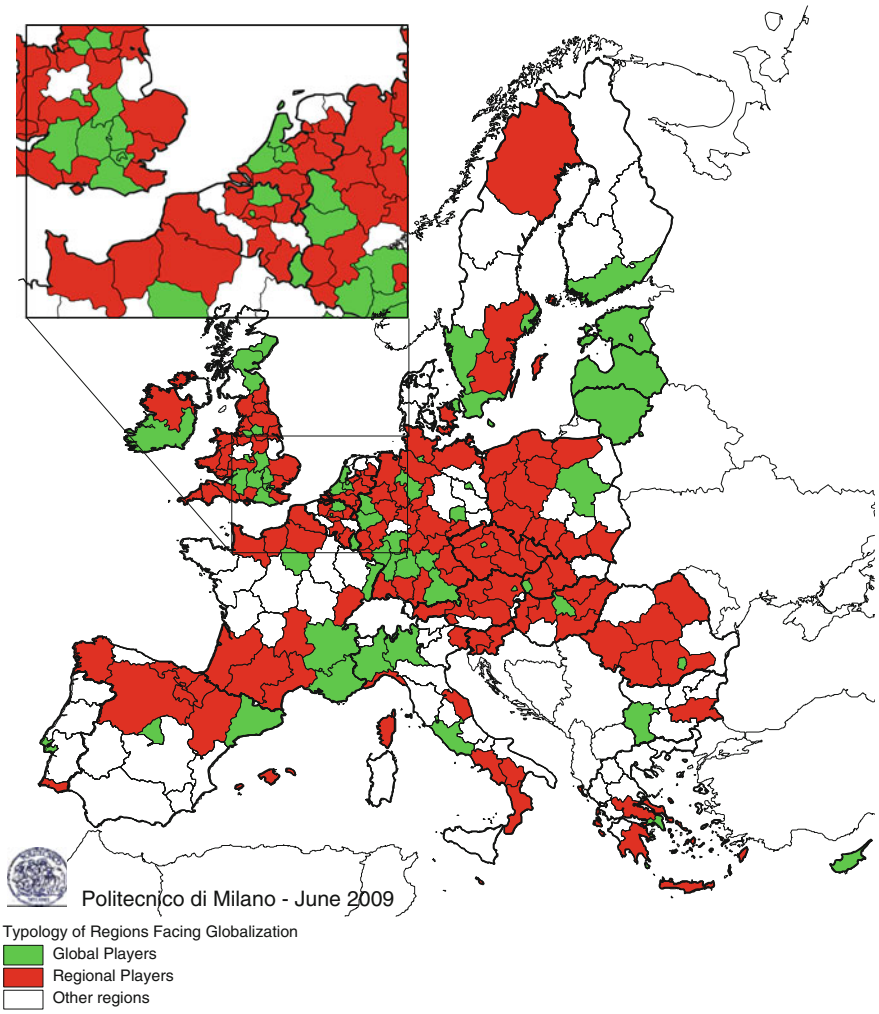
The result of the empirical taxonomy is presented in Map 3.1. The three groups of European regions will be at the basis of the following empirical analyses.

3.2 Employment, Productivity and GVA Dynamics: Manufacturing vs. Service Sectors

As mentioned in Sect. 2, globalization is often associated with a shift to services, sometimes even involving an outright deindustrialization process, which implies not simply that industrial employment decreases but that industrial employment losses are associated with insufficient productivity gains, and with a decline in industrial GVA in real terms. For this reason, analyses of employment, GVA and productivity must be performed simultaneously.

Table 3.2 shows the patterns followed in the period 1997–2007 by the three main indicators of regional growth, namely employment, productivity and value added, for the three types of region illustrated in Sect. 3.1: the global players, the regional players, and the local players. Only two of these indicators are really independent, and data on the third of them have been obtained by combining the other two.

In the first part of Table 3.2, each indicator is represented separately for agriculture, manufacturing and services, plus construction, in order to capture the different patterns followed by the macro-sectoral activities of the economy.



Map 3.1 Typology of regions in regard to globalization. Source: Capello et al. (2011)

All patterns are represented as average annual (real) growth rates in the 10 years of fast globalization before the big economic crisis, i.e. for the period 1997–2007.

Employment growth shows a clear shift to service activities: employment has rapidly grown in services, whereas employment in manufacturing and agriculture has decreased. Service employment growth is sizeable in all regional typologies and especially, though not sizeably, in global players.

Manufacturing employment, by contrast, has decreased in the three typologies, but especially in global and, second, regional players. Being specialized in open growing sectors, therefore, is not enough to maintain manufacturing employment levels. Manufacturing employment has remained almost stable in local players, especially

Table 3.2 Annual average growth rates of employment, productivity and GVA by macro-sector in the period 1997–2007. EU27 Nuts2 regions, by typology

Sector (Ateco code in parenthesis)	Type of region	Employment	Productivity	GVA
Agriculture (A+B)	Local players	−2.76	2.88	0.04
	Regional players	−4.12	4.17	−0.12
	Global players	−2.63	3.48	0.76
Energy and manufacturing (C+D+E)	Local players	−0.22	2.39	2.16
	Regional players	−0.79	3.16	2.35
	Global players	−1.17	3.04	1.83
Construction (F)	Local players	2.67	−0.61	2.05
	Regional players	1.39	0.25	1.65
	Global players	2.16	−0.39	1.76
Services (from G to P)	Local players	2.00	0.82	2.84
	Regional players	1.73	1.46	3.21
	Global players	2.04	1.52	3.60

Source of data: Cambridge Econometrics Regional Database

if compared with global and regional players. It is likely that this employment stability can be explained by the locally protected nature of local players' markets with respect to the other regions, at least before the economic crisis.

The gap between the service and manufacturing employment growth rates may represent a first signal of the shift to service activities of the most global regional economies, as this is much stronger in global players than in regional players, and even more so with respect to local players. We can therefore assume that a long-run shift in the globalization process towards the services sector in the European economy is indeed taking place, and that it is affecting global regions much more than the others.

The second column of Table 3.2 represents productivity growth. First to be observed is that, in European regions of all types, manufacturing productivity has been growing more than service productivity.[1] The slow growth of productivity in services—the sector accounting for almost all employment growth—signals that there is an ongoing process of manufacturing restructuring, and that the service sector also acts as a channel for job creation and absorption of shed workers.

Productivity increases have been large in global players both in services and manufacturing, but manufacturing productivity has been growing even more in regional players which are specialized in open growing sectors, whereas productivity increases have been consistently lower in the local players, signaling that globalization forces have been drivers of productivity increases, probably because of technological and productive competition.

The third column of Table 3.2 presents the patterns followed by gross value added. Even if GVA is simply the product of employment and productivity, its

[1] We acknowledge that measuring service GVA and productivity is not straightforward (Mark, 1982; OECD, 2001), especially for public services, but we believe that aggregate data are in any case able to capture the general trends though they might not be extremely accurate.

pattern is perhaps the most interesting because one can understand whether some effects are purely statistical or whether they hide important economic trends. In fact, productivity increases could be obtained by cutting the less productive jobs, and in this case total value added would also decrease; but it is also possible that, thanks to technological or organizational innovations, the restructuring process can yield higher total value added with lower employment levels.

It is the second possibility that applies in manufacturing in all three types of regions, where total value added has increased owing to productivity increases and despite employment decreases. Even if the GVA pattern appears to be similar, global forces may have played a role in this regard: local players obtain high manufacturing GVA growth through much lower productivity increases, and almost a maintenance of employment levels. Local players, de-specialized in open growing sectors, have therefore probably been the collectors of lower manufacturing production phases, whereas the most open regions have had to shift to phases with higher value added, and to cut and delocalize the lower phases.

Globalization, however, is a process closely linked to services: global players have been growing faster in both employment and productivity, so that also their GVA has grown more than in any other group of regions. The second performance in terms of GVA growth is that of regional players, which have had slow service employment growth but a high service productivity growth. Finally, local players record the lowest GVA growth owing to much lower productivity growth, so that also in services these non-global regions are mainly specializing in low-value added functions.

Therefore, the descriptive analysis shows that the strong position and socio-economic structure of global players is associated with a more decisive development of the service activities, and with larger shares of the economy in this sector and the higher value added functions. The other regions, by contrast, have experienced lower service employment growth, limited to the lower value-added functions, those that can be more easily decentralized.

3.3 Employment, Productivity and GVA Dynamics by Types of Services

The descriptive analysis has shown that the most global regions are also those with the best performance in service sectors, and that therefore the shift towards the service activities is a process strictly linked to globalization. An analysis of sectorally disaggregated data is helpful to determine whether the patterns of different types of services are indeed differentiated. The expectation is that the different functions performed by different types of regions in the global economy will also be reflected by different economic specializations.

As Table 3.3 shows, service employment growth has been larger in non-market services in all regional typologies, signaling the role of the service sector as the

Table 3.3 Annual average growth rates of employment, productivity and real GVA by service sector in the period 1997–2007. EU2 Nuts2 regions, by typology

Sector (Ateco code in parenthesis)	Regional type	Employment	Productivity	Real GVA
Market Services (G+H+I+J+K)	Local players	1.49	0.90	2.40
	Regional players	1.12	1.89	3.03
	Global players	1.42	2.07	3.52
Non-Market Services (L+M+N+O+P)	Local players	3.29	−0.01	3.28
	Regional players	3.13	0.24	3.38
	Global players	2.96	0.67	3.65
Distribution (G)	Local players	1.47	0.51	1.99
	Regional players	1.06	1.88	2.96
	Global players	1.04	2.03	3.09
Hotels and restaurants (H)	Local players	2.28	−0.83	1.43
	Regional players	2.07	−0.44	1.61
	Global players	2.43	−0.17	2.26
Transport, storage and communications (I)	Local players	0.94	2.67	3.63
	Regional players	0.60	3.16	3.78
	Global players	1.64	2.96	4.65
Financial intermediation (J)	Local players	0.20	2.69	2.90
	Regional players	0.22	3.49	3.72
	Global players	0.58	3.69	4.29
Real estate, renting and business activities (K)	Local players	5.00	−1.25	3.68
	Regional players	4.40	−0.96	3.40
	Global players	4.16	−0.39	3.75

Source of data: Cambridge Econometrics Regional Database.

recipient of employment losses created by manufacturing restructuring. Global players are those regions which have been less reliant on these protected services. Market service employment, at the same time, has been growing less, and not only in global players but also in local players, while regional players have created less jobs.

More than employment, however, service productivity is more closely linked to global flows. It is in fact clear that the productivity of services in global regions and, to a lesser extent, in regional players, has been growing much more than in local players. Especially higher is the productivity growth of global players in market services, which are obviously those more concerned with the globalization processes described in Sect. 2.

As can be observed from the patterns of GVA, growth in global players has been driven by market services, which have a growth rate similar to that of non-market services, while in less open regions the growth of public-sector-related services is significantly higher.

It is also possible to disentangle the patterns of individual sectors within market services. In particular (Table 3.3), it is possible to observe that in distribution (G), a sector where FDI are mainly market-seeking, the GVA performance of global and regional players is the highest, and this is accompanied by efficiency gains in terms

of productivity, whereas in local players the sector has been growing especially in terms of employment, absorbing jobs from restructuring sectors.

Hotels and restaurants, which are endogenously linked to people flows, have also been growing more than anywhere else in global players (see GVA). Moreover, this pattern is accompanied by larger employment creation and, especially, by a productivity pattern which sees global players as the only type of regions able to maintain almost constant productivity in this sector.

Transport, storage and communications is a mixed sector in which activities from logistics to ICTs are classified. Also in this sector, global players have been outperforming the other regions of Europe in terms of employment and GVA; but in this case the largest productivity increases are in the most manufacturing regions, the regional players—those where manufacturing has had the strongest performance.

Given the urban nature of most global player regions, it is unsurprising that financial intermediation further concentrates in these regions, so that they have the largest growth rate in terms of employment, productivity and value added. This service sector is consequently strictly linked to regions able to play a role in global flows, as also testified by the fact that regional players come second in all three indicators.

The last sector, real estate, renting and business activities is another mixed sector. This has been acting as a very large creator and collector of employment, as shown by the very high employment growth rates. Interestingly, employment growth has been stronger in less global regions, the same ones where productivity decreases have been more marked. As a consequence, the GVA performance is very similar across globalization typologies. But again this is obtained in a different way, i.e. by simply creating new jobs in globalized regions and by increasing the employment base in the less global ones.

4 GDP Growth and Service Specialization in European Regions

The previous section underlined the relative performance of service sectors with respect to manufacturing and agricultural sectors, in terms of GVA, employment and productivity dynamics. It is of interest to conduct further analysis on whether the best performing regions in Europe are associated with some specific service specialization, or if instead manufacturing specialization still characterizes relatively well performing regions.

The first step of such analysis requires the identification of regions that record a GDP growth higher than the European average. Table 3.4 shows the number of regions that have higher-than-average GDP growth in Europe for each specific category, namely global, regional and local regions.

An interesting result emerges from a simple exercise like this one: regions that record higher-than-average GDP growth rates are evenly distributed among categories. Global players more often fall short of the average GDP growth, even

Table 3.4 Number of higher-than-average performance regions for each category[a]

		Global players Old 15	Regional players Old 15	Local players Old 15	Old 15	Global players New 12	Regional players New 12	Local players New 12	New 12
Regions with higher than EU average GDP growth (virtuous regions)	– Total number	16	44	33	93	8	18	5	31
	– Percentage	34	45.4	54.1	45.4	80	52.9	41.7	55.4
Total number of regions		47	97	61	205	10	34	12	56

Source: authors' calculations

[a]Annual average real GDP growth rates are calculated for Western and Eastern Europe separately

Table 3.5 Annual average real GDP growth rates of the three types of regions, 1997–2002 and 2002–2007

	Global players	Regional players	Local players	F
All European regions				
Growth rate 1997–2002	3.29	2.28	2.06	9.40***
Growth rate 2002–2007	2.84	3.04	2.53	2.14
Differential growth with respect to the nation 1997–2002	0.53	−0.50	−0.75	12.74***
Differential growth with respect to the nation 2002–2007	0.12	−0.09	−0.41	5.33***
Old 15 country regions				
Growth rate 1997–2002	2.94	2.45	1.96	6.03***
Growth rate 2002–2007	2.26	2.44	2.21	1.00
Differential growth with respect to the nation 1997–2002	0.19	−0.31	−0.79	7.11***
Differential growth with respect to the nation 2002–2007	−0.08	0.02	−0.19	1.59
New 12 country regions				
Growth rate 1997–2002	6.06	1.79	2.60	11.07***
Growth rate 2002–2007	7.33	4.80	4.20	8.83***
Differential growth with respect to the nation 1997–2002	3.14	−1.06	−0.57	17.42***
Differential growth with respect to the nation 2002–2007	1.72	−0.41	−1.51	14.85***

Source: calculated by the authors on Cambridge Econometrics Regional Database
***p < 1%; **p < 5%; *p < 10%

if the comparison is made with the EU15 average rather than with the total European average, which also contains fast-growing Eastern regions.

If the regional growth rates are calculated, a slightly different picture emerges (Table 3.5). In the first period of time, i.e. 1999–2002, global players significantly outperformed the other types of regions in terms of GDP performance. This was the case of both regions in the Old 15 member countries and in the New 12 ones. Interestingly, in Western regions regional players were the second performers, close to global players, whereas in Eastern regions global players by far outperformed local players (the second best performers) as well as regional players. In the second period of time (2002–2007), global players were again significantly the best performers among Eastern European regions, but not significantly different overall and in Western countries.

National effects were controlled for once regional growth had been analysed with respect to its national average. The results show that global players have generally been leading their respective countries in terms of growth rates. Being a global player appears significantly to increase the possibility of being a region growing more than the average and to lead the country in terms of growth. In Eastern countries, the differential of global players with respect to their countries is high and significantly different from that of the other regions in both periods. In Western

countries the differential growth rate is larger and significant in the first period, while in the second period, regional players perform better, but not significantly.

Understanding causally the differential growth rates recorded by global and regional players requires in-depth analysis of the structural features characterising virtuous regions with respect to non-virtuous ones in each group of regions, through the use of multivariate econometric regressions.[2] This is not the aim of this chapter, which instead focuses on a descriptive analysis of the structural features of a local economy which are all local assets and are conceptually linked to regional growth patterns from the quality and quantity of human capital to entrepreneurship, innovation, productive functions, transport infrastructure endowment.[3] In particular, since this if the focus of the book, our interest is to associate the role of service specialization with virtuous patterns of growth. Structural features, in fact, also encompass the mix of sectors in the region, the regional sectoral specialisation and its spatial concentration, as well as policy measures like structural funds.

An analysis of variance makes it possible to compare the values that structural features assume between virtuous and non-virtuous regions, and to calculate the statistical differences among these values for those European regions, namely the global and the regional players, which have a role in the global economy.[4] The comparison is made between higher-than-average and lower-than-average growing regions, keeping global and regional players as well as Western and Eastern regions separate from each other, given the "two growth models" hidden behind the economies of the two blocks of countries.

Unfortunately, the number of global players in the East is too small. Moreover, almost all these regions are virtuous, so that this precludes the use of this type of analysis for Eastern global players, and the results will be presented for only Western global players, Western regional players and Eastern regional players.

The results for Western global players are presented in Table 3.6, where only the statistically significant differences in the structural characteristics between virtuous and non-virtuous global players are given.

The sectoral specialization is quite different between the two groups of regions. The more virtuous regions exhibit higher specialization in advanced private services, Transport, storage and communication and Financial intermediation, and, interestingly enough, are characterised by an above-average presence of dynamic sectors, in both manufacturing and services. Specialization in particular manufacturing sectors, on the contrary, seems not to be associated with a virtuous regional growth pattern; the strong specialization of the region in manufacturing (captured by an Herfindal index) seems to play a role.

[2] For an exercise like this see Capello et al. (2011) and Capello and Fratesi (2011).

[3] For a review on regional growth theory, see Capello and Nijkamp (2009).

[4] In that this is simple statistical analysis, the results presented have no cause-effect chain, and their purpose is only to describe the statistical differences in structural feature endowment among the three types of regions. Care is taken to ensure that the structural features analyzed have nothing to do with the way in which the typology has been created. This allows circular reasoning to be avoided.

Table 3.6 Selected characteristics of global players in Western countries

Variables	Virtuous regions[a] 2002–2005	Non-virtuous regions[b] 2002–2005	F	Sig.
Sectoral specialization				
Location quotient in sector J Financial intermediation (2002)	1.11	1.61	4.28	*
Location quotient in sector I Transport, storage and communications (2002)	1.24	1.04	4.26	**
Location quotient of growing service sectors (2002)	1.40	1.07	7.49	***
Location quotient of growing manufacturing sectors (2002)	1.17	0.87	3.14	*
Herfindal index in manufacturing sectors (2002)	0.16	0.14	3.43	*
Functional specialization				
Share of legislators and senior government officials (average value over 3-year period 1999–2001)	0.008	0.005	4.47	**
Share of managers in SMEs (average value over 3-year period 1999–2001)	0.039	0.027	8.07	***
FDI penetration index (average value over 3-year period 1999–2001)	4.94	3.767	0.33	

Source: authors' calculations on Eurostat data
[a]Regions with higher than EU average GDP growth rate
[b]Regions with lower-than-EU-average GDP growth rates
***$p < 1\%$; **$p < 5\%$; *$p < 10\%$

The presence of command and control functions in SMEs (measured as the share of managers in SMEs) makes a difference with respect to non-virtuous regions (Table 3.6). An unexpected result is obtained for FDI penetration. Despite being greater in global regions than the rest of EU global regions, FDI penetration does not appear to differ between virtuous and non-virtuous global regions.

The characteristics which enable regional players to be competitive are expected to be different from those that enable global players to grow, given the lack of world accessibility that characterises regional players.

The results of the analysis for regional players in Old 15 member countries are reported in Table 3.7. The dynamics of virtuous regional players in the West are not driven by manufacturing specialization, neither in high nor in low-tech activities, but rather by specialisation in traditional service sectors, such as those linked with tourism (H Hotels and restaurants) and the public sector (L Public administration and defence; compulsory social security). The success of these regions can probably be explained by their ability to innovate in mature sectors, offering new and attractive services in traditional activities (e.g. agri-tourism, balanced coastal tourism). The Herfindal index is higher in regional virtuous than in regional non-virtuous players; this result testifies that regional virtuous regions draw advantage from localization economies stemming from spatial concentration in manufacturing sectors. Moreover, regional virtuous regions are more assisted than their non-virtuous counterparts by public policies, and structural funds in particular.

Table 3.7 Selected characteristics of regional players in Western countries

Variable	Virtuous regions[a] 2002–2005	Non-virtuous regions[b] 2002–2005	F	Sig.
Sectoral specialization				
Location quotient in sector D Manufacturing (2002)	0.880	1.196	15.4	***
Location quotient in sector H Hotels and Restaurants (2002)	2.106	0.834	16	***
Location quotient in sector L Public Administration and Defence (2002)	1.116	1.006	2.84	*
Location quotient in High-tech manufacturing sectors (2002)	0.607	1.076	13.67	***
Location quotient in Medium High-tech manufacturing sectors (2002)	0.849	1.282	12.08	***
Location quotient in Medium-Low manufacturing sectors (2002)	0.929	1.315	8.72	***
Herfindal index in manufacturing sectors (2002)	0.089	0.080	6.72	**
Functional specialization				
Share of legislators and senior government officials (average value over three-period 1999–2001)	0.106	0.082	8.85	***
Share of managers in SMEs (average value over 3-year period 1999–2001)	0.053	0.028	31.19	***
Share of physical, mathematical and eng. science professionals (average value over 3-year period 1999–2001)	0.023	0.029	6.59	**
Share of people with second-level educations (share of people in EGP-2 professions)	21.30	19.20	8.6	***
Share of people with postgraduate educations (Isced 5 and 6) (average value over 3-year period 1999–2001)	0.830	0.976	4.61	**
FDI penetration index (average value over 3-year period 1999–2001)	0.466	0.837	0.83	***

Source: authors' calculations on Eurostat data
[a]Regions with higher-than-EU-average GDP growth rate
[b]Regions with lower-than-EU-average GDP growth rate
***p < 1%; **p < 5%; *p < 10%

The economies of virtuous regional players are characterized to a more than average extent by control functions (legislators, senior officials and managers), and in particular those of SMEs (share of managers in SMEs), while the scarce presence of physical, mathematical and engineering science professionals may be due to their service specialisation. This datum is corroborated by the scant presence of people with post-graduate degrees (ISCED 5 and 6) and the higher presence of people with second-level qualifications (high share of people in EGP-2 professions). Overall, it appears that, among Western regional players, the virtuous ones are those characterised by intermediate-level service functions and by high functions in the public service sector.

The last analysis performed is for regional players in Eastern regions (Table 3.8). Here a large number of characteristics emerge which differentiate virtuous from

Table 3.8 Selected characteristics of regional players in Eastern countries

Variable	Virtuous regions[a] 2002–2005	Non-virtuous regions[b] 2002–2005	F	Sig.
Sectoral characteristics				
Agricultural productivity (2002)	6.90	2.84	36.92	***
Industry productivity (2002)	7.77	9.68	3.79	*
Service productivity (2002)	7.51	11.3	8.46	***
Growth of service employment (2000–2002)	0.32	1.48	4.02	*
Loc. Quot. in sectors A Agriculture, hunting and forestry, B Fishing (2002)	3.45	2.00	4.66	**
Location quotient in sector D Manufacturing (2002)	1.56	1.25	10.41	***
Location quotient in sector F Construction (2002)	1.08	0.90	17.29	***
Location quotient in sector I Transport, storage and communications (2002)	1.23	0.95	8.72	***
Location quotient in sector J Financial intermediation (2002)	0.31	0.61	52.21	***
Location quotient in sector K real estate, renting and business activities (2002)	0.50	0.63	18.31	***
Location quotient in Medium Low-tech manufacturing sectors (2002)	1.78	1.29	4.99	**
Location quotient in Low-tech manufacturing sectors (2002)	1.65	1.38	3.17	*
Herfindal index in manufacturing sectors (2002)	0.13	0.11	6.07	**
Lawrence index in all sectors (1995–2002)	0.15	0.21	10.75	***
Functional specialization				
Share of legislators and senior government officials (average value over 3-year period 1999–2001)	0.04	0.06	7.13	**
Share of physical, mathematical and engineering science professionals (average value over 3-year period 1999–2001)	0.012	0.017	3.69	*
Share of clerks (average value over 3-year period 1999–2001)	0.054	0.087	11.04	***
Share of craft and related trade workers (average value over 3-year period 1999–2001)	0.214	0.183	6.72	**
Location quotient of growing manufacturing sectors (2002)	1.475	1.044	5.53	**
Location quotient of growing service sectors (2002)	0.965	1.080	2.93	*
Share of people with postgraduate educations (Isced 5 and 6) (average value over 3-year period 1999–2001)	0.733	0.950	5.95	**
FDI penetration index (average value over 3-year period 1999–2001)	0.950	0.158	3.8	*

Source: authors' calculations on Eurostat data
[a]Regions with higher- than-EU-average GDP growth rate
[b]Regions with lower-than-EU-average GDP growth rate
***p < 1%; **p < 5%; *p < 10%

non-virtuous regions. Firstly, a convergence process seems to take place. Virtuous regional players in Eastern countries are poorer than the rest of Eastern regional players, and they record lower productivity levels in both services and manufacturing only partly off-set by greater agricultural productivity with respect to non-virtuous regions. The virtuous regional players in the East are specialized in Agriculture, hunting and forestry (A) Fishing (B), Manufacturing (D) and Construction (F), and they are able to maintain their specialization over time, as evidenced by the high manufacturing Herfindhal index and the low Lawrence index. The latter measures the changes in a region's specialisation: the lower the index, the lower the changes in the sectoral specialisation of a region.

Among the service sectors, virtuous regions in Eastern countries are only specialized in traditional sectors like Transport, storage and communication (I), and they are particularly de-specialized in some advanced services, namely Financial intermediation (J) and Real estate, renting and business activities (K), with respect to non-virtuous regions.

Interestingly, the virtuous regional players in the East are specialized in the low- and medium-tech manufacturing sectors, with few physical, mathematical and engineering science professionals and a low share of people with post-graduate degrees (Isced 5 and 6). Low shares of basically service workers, like clerks, are off-set by a high percentage of craft and related trade workers. This sectoral/functional specialization again shows that, in Eastern countries, virtuous regions are the less developed ones that start up a convergence process.

In general, what emerges from this analysis is that the regional specialization in service sectors is associated with virtuous patterns of growth. However, the specialization in services changes according to the degree of openness of regions. In global regions in Western countries, what emerges is the specialization in advanced and dynamic service sectors. Interestingly, this is true only for these regions: in fact, virtuous global regions in Eastern countries do not register any specialization in advanced services, and are more related to manufacturing specialization. Virtuous regional players in Eastern countries are even associated with de-specialization of service activities.

5 Conclusions

The role of the service sector in the global economy has greatly increased in importance over the past decades. All major qualitative changes in globalization trends have affected the service sector. Deindustrialization processes call for an increase in service employment. Higher competition, in its turn, calls for specialization in advanced and private services, which are the most productive activities.

This chapter has presented the qualitative change in the globalization process and the effects that raise new challenges for regional economies. An empirical analysis has investigated at regional level the trend of GDP, employment and productivity in the different macro-industry, agriculture, manufacturing and service; the distinction between highly global regions—those regions with above-average (economic and

physical) connectivity with the rest of the world—and local regions has shown that higher productivity growth rates are associated with advanced service sectors in global regions.

Moreover, the chapter has descriptively analysed the relationship between specialization in services and higher relative regional performance. Global regions in Western countries are the only ones where a significantly higher specialization in advanced service sectors is associated with the virtuous regions. In all other cases, the association of virtuous patterns of growth is associated with manufacturing specialization and/or low service specialization.

The overall conclusion is that the service sector is increasingly important for regions to be able to compete in the global world, because it characterizes those European regions more open to the external world. As a consequence, its transformations should not be underestimated in the years to come.

References

Affuso, A., Capello, R., & Fratesi, U. (2011). Globalization and competitive strategies in European vulnerable regions. *Regional Studies, 45*(5), 657–675.

Baldwin, R. (2006). *Globalisation: the Great Unboundling*. Prime Minister's Office, Economic Council of Finland.

Camagni, R. (1991). Regional deindustrialization and revitalization processes in Italy. In H. Sazanami & L. Rodwin (Eds.), *Industrial change and regional economic transformation* (pp. 137–167). London: Harper Collins.

Capello, R., & Fratesi, U. (2011). Crescita Regionale in un Contesto di Globalizzazione: l'Eterogeneità Spaziale nei Fattori di Successo. In L. Resmini & A. Torre (Eds.), *Competitività Territoriale: Determinanti e Politiche* (pp. 129–158). Milano: FrancoAngeli.

Capello, R., Fratesi, U., & Resmini, L. (2011). *Globalisation and regional growth in Europe: Past trends and scenarios*. Berlin: Springer.

Capello, R., & Nijkamp, P. (Eds.). (2009). *Handbook of regional growth and development theories*. Cheltenham: Edward Elgar.

Davies, R. B., & Guillin, A. (2011). *How far away is an intangible? FDI, space and services*, working paper, University College Dublin.

Fontagné, L., & Lorenzi, J.-H. (2005). *Déindustrialisation Délocalisation*. Paris: La Documentation Française.

Fratesi, U. (2012). A globalization-based taxonomy of European regions. *Regional Science Policy and Practice, 4*(1), 1–23.

Golub, S. S. (2009). Openness to foreign direct investment in services: An international comparative analysis. *The World Economy*. doi:10.1111/j.1467-9701.2009.01201.x.

Lejour, A. (2007). FDI in services: Recent developments and prospects in Europe. In K. Liebscher, J. Christl, P. Mooslechner, & D. Ritzberger-Grunwald (Eds.), *Foreign direct investment in Europe: A changing landscape* (pp. 175–189). Cheltenham: Edward Elgar.

Mark, J. A. (1982). Measuring productivity in service industries. *Monthly Labour Review*, pp. 3–8.

OECD (2001), *Measuring productivity*. Paris

OECD. (2007). *Globalisation and Regional Economies*. Paris, chapters 1 and 2.

Perloff, H. (1957). Interrelations of state income and industrial structure. *The Review of Economics and Statistics, 39*(2), 162–171.

Perloff, H., Dunn, E., Lampard, E., & Muth, R. (1960). *Region, resources and economic growth*. Baltimora: John Hopkins.

Resmini, L. (2013). FDI in services in European regions: An overview. In J. R. Cuadrado-Roura (Ed.), *Service industries and regions*. Heidelberg: Springer (in this volume).

Riedl, A. (2008). *Contrasting the dynamic patterns of manufacturing and service FDI: Evidence from transition economies*, working paper n. 117, Vienna University of Economics and Business Administration.

UNCTAD. (2004). *World investment report: The shift towards services*. Washington: UN.