

Sari Pekkala

Regional Convergence and Migration
in Finland 1960-95



UNIVERSITY OF JYVÄSKYLÄ

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Sari Pekkala

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ABSTRACT

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Finnish Summary

Diss.

This thesis reports five empirical studies on regional development in Finland. The main focus is on regional economic growth and disparities. The mobility of labour is considered to be one of the decisive factors in determining regional economic structures. Regional migration is thus given a central role in the following chapters. The study seeks to identify what factors have determined the pattern in regional development over the past three decades.

The first chapter looks at the development of the Finnish regional economy from 1960s to the present day. Among other factors, trends and developments in regional policy, regional industrial structures, regional equality, movements and concentration of population are described.

Second chapter analyses regional GDP growth and convergence at different regional levels and periods, and shows that regional convergence has taken place in Finland. However, its speed has varied greatly in time and across different levels of regional aggregation. Hence the third chapter examines whether these differences in convergence experience are related to aggregate economic fluctuations. It is found that convergence is related to economic upswings, whereas the poorest regions fall mostly behind during recessions.

The study of migration as a force affecting regional development is reported in chapter four. The regional characteristics affecting net in-migration positively are the rate of regional income growth and regional education level. Conversely, regions displaying a high level of unemployment tend to suffer from negative net migration, which further slows their economic development. The link between economic growth and migration is analysed in the fifth chapter that tests for the short- and long-run effects of migration on regional growth. It shows that in the short-run migration tends to equilibrate regional income differences, but in the long-run it acts as a disequilibrating mechanism.

The final chapter looks into how migrating affects individual post-move incomes and what role regional characteristics and the choice of destination region play in this process. It is found that clear regional differences exist between the Finnish regions in the way in which migrants benefit from moving. Hence, migration affects incomes both at the regional and individual level.

Keywords: regional convergence, migration, economic growth, economic fluctuations, regional productivity, individual incomes

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My enthusiasm about regional economics in general, and convergence in particular, started at the University of Kent where I studied the Economics of the European Union in 1995-96 under the supervision of Professor Roger Vickerman. His apparent fascination about the subject he lectured made me very keen on studying regional economics, and Professor Vickerman also took personal interests in the further stages of my studies. After I came back to Finland and started preparing my MA thesis in 1997 I had lengthy discussions with Professor Hannu Tervo who encouraged me to take on an empirical study of regional convergence, that was a "pop-subject" at the time.

I found the topics of regional economics so interesting that the MA thesis grew into a licentiate- and then a doctoral dissertation. For all this I owe the greatest thanks to Professor Hannu Tervo for the encouragement and guidance he happily gave whenever I needed it. Professor Tervo really takes special care of his students!

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Sari Pekkala

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1 INTRODUCTION

1.1 Background

There has been a dramatic growth of interest in regional economics throughout the last decade of the present century. Regions are now seen as the "new economic entities" in a rapidly globalising world. This view is further strengthened by the deepening economic integration taking place, especially in Europe, but also elsewhere in the world. Questions about regional success factors and competitiveness have been raised by both politicians and researchers, as the former are seen as among the key forces in global competition. For these reasons regional economics is now taking its place as a specialist subject in the mainstream literature, and its methods have been successfully applied, particularly in growth economics and international economics.

In the economic literature two noticeable strands of investigation related to regional development have emerged since the 1980s. Firstly, the discussion on economic growth and convergence has dominated the economic literature on regional development for most of the 1990s. Seminal work by Barro and Sala-i-Martin (1991) provided easy instruments for analysing international and regional economic growth, and the general consensus was that economic convergence had been taking place in most countries. Simultaneously, and seemingly quite contrary to the neo-classical convergence literature, the economics of trade and agglomeration launched by Krugman (1991) generated just as much enthusiasm, particularly among the theorists. The outcome of the agglomeration literature was the renewal of the so-called core-periphery model that predicts that most economic activity will eventually take place in the core economy, whereas the periphery will become even more deserted as labour and firms move to the core.

These two strands of investigation may appear, in the first sight, to produce contradicting empirical scenarios. However, it should be remembered that the neo-classical growth literature is based on per capita differences that may well be declining at the same time as people and production become more

concentrated, as assumed by the agglomeration literature. Empirical support exists for the neo-classical growth model in particular and to lesser extent for the core-periphery model, which does not easily lend itself to empirical testing. The present research is therefore mainly guided by the neo-classical growth literature, which allows relatively straight-forward and well-researched empirical methods to be used.

The role of migration is central in both of the above theoretical frameworks. However, where the core-periphery literature sees the mobility of labour as a key factor encouraging agglomeration and core formation, the neoclassical view emphasises the equilibrating role of migration. Indeed, it has been argued that migration should equalise regional employment structures and speed up the convergence process in regional incomes (Richardson, 1973, Barro and Sala-i-Martin, 1995). However, the hypothesis that migration will lead to smaller income disparities has so far received limited empirical support (Barro and Sala-i-Martin, 1992, Chun, 1996, Persson, 1997). The theoretical framework and inter-connection of regional convergence and migration are presented below.

1.2 Theoretical framework

1.2.1 The neo-classical growth theory

The current neo-classical growth literature is based on a Solowian growth model (Solow, 1956, Swan, 1956) that studies economic growth using a simple production function, that is often of the Cobb-Douglas variety:

$$(1) \quad Y = f(K, L)$$

Above, the factors of production are labour, L , and physical (or human) capital, K , which experiences diminishing returns to scale. In per capita terms, or intensive form, the production function is expressed as

$$(2) \quad y = f(k).$$

The fundamental dynamic equation of the Solow-Swan model describing the change in per capita capital stock is

$$(3) \quad dk/dt = s \times f(k) - (n + \delta + g) \times k,$$

where s is the rate of savings. Owing to the diminishing returns property the economy is expected to converge towards a steady state in which k is constant ($dk/dt = 0$) and population grows at a constant rate, n . Moreover, the rate of depreciation, δ , and the rate of technological progress, g , are also constant. Convergence towards the steady state occurs according to a transition equation where long-run growth emerges as a purely exogenous phenomenon:

$$(4) \quad \gamma_k \equiv (dk/dt) / k = s \times f(k)/k - (n + \delta + g).$$

From the transition equation (4) it can be calculated that the derivative of γ_k with respect to k is negative, i.e. there are diminishing returns to capital. In other words, if the economy starts with a low level of capital (or income, as these two concepts are equal in the Solow-Swan model) it will experience a

higher growth rate, and vice versa. This convergence property expresses itself as

$$(5) \quad \begin{aligned} dk/dt &= \{[f'(k^*)k^*/f(k^*)]-1\}(n + \delta + g)(k - k^*) \\ &= -(1 - \alpha)(n + \delta + g)(k - k^*), \end{aligned}$$

where the derivative-term of the right hand side of the first equation is the capital share α , in the steady state and other steady-state values are marked with an asterisk. Moreover, the convergence tendency displayed by each individual economy will also be experienced by a cross-section of economies that are similar enough in terms of their steady states.

The property determined by (5) is called absolute convergence, or more specifically absolute β -convergence, i.e. the speed at which a single economy, or a group of very similar economies, approaches its steady state level of capital, and therefore income. For a group of economies whose steady states differ from each other there is a possibility of conditional convergence, i.e. absolute convergence after the steady state differences have been removed. Perhaps of greater practical interest, however, is the concept of σ -convergence that measures the extent to which the dispersion of income levels diminishes in a cross-section of economies. These two phenomena and their related issues, such as economic cycles and fluctuation, migration etc., are the core of the analysis in the present study. Further theoretical points and diversions from the neo-classical framework are explained in each of the subsequent empirical chapters.

1.2.2 Migration in the neo-classical growth theory

In the Solow-Swan model, migration is considered to be an important adjustment mechanism in the inter-regional growth process. Specifically, it is assumed to be a factor that speeds up the convergence of incomes, as workers move from low to high-wage areas. This continues until a steady state is reached where relative wages are equal in all economies (Richardsson, 1973). Migration, in the first place, affects the rate of population growth, which, in turn, affects the growth of per capita incomes. The rate of population growth is given by (Barro and Sala-i-Martin, 1991):

$$(6) \quad (dL/dt) / L = n + M/L = n + m,$$

where M is the flow of migrants to the economy, L is the size of the domestic population and labour force, and n is the growth rate of the population. Hence $m \equiv M/L$ is the net migration rate.

As migrants mainly carry human capital and to lesser extent physical capital, they only exert a small impact on the growth rate of physical capital. However, the Solow-Swan model does not distinguish between the two types of capital, and hence the change in total capital stock (K) can be written as

$$(7) \quad dK/dt = s \times F(K, L) - \delta K + \kappa M,$$

where κM represents the capital that immigrants have brought with them or outmigrants have carried away. It can be shown that the case with migration differs from (4) only in one respect, that is, the augmentation of a migration term in the effective depreciation rate ($n + \delta + g$). Specifically, we have

$$(8) \quad \gamma_k = s \times f(k)/k - (n + \delta + g) - m \times [1 - (\kappa/k)].$$

If $m > 0$, the economy is gaining more capital through in-migration, and when $m < 0$, out-migrants are depleting the economy of its capital. And, giving migration a functional form such as $\xi(k) \equiv m(k) \times [1 - (\kappa/k)]$, equation (8) can be manipulated to

$$(9) \quad \gamma_k = s \times f(k)/k - [n + \delta + g + \xi(k)].$$

After adopting a Cobb-Douglas production function, log-linearising it and assessing it around the steady state, it can be shown that migration exerts a positive impact on the speed of convergence (Barro and Sala-i-Martin, 1995). In other words, the size of parameter b , upon which the speed of convergence depends is

$$(10) \quad b = \alpha \times [1 - (\kappa/k)] \times \partial m / \partial [\log(y)].$$

Assuming that $\kappa < k$ and $b > 0$, (9) can be log-linearised and the speed of convergence computed as

$$(11) \quad \beta = (1 - \alpha) \times (n + \delta + g) + b + b \times (1 - \alpha) \times \log(k^*/k_{\text{world}}).$$

Above, it can be noted that migration raises the β coefficient by the amount of b . Empirical studies have been carried out to confirm the actual size of that effect (Barro and Sala-i-Martin, 1991 and 1992, Braun, 1993), and it has been noted that migration brings about a 10 per cent increase in the speed of convergence.

1.2.3 Criticisms of the neo-classical theory

Neo-classical growth theory and its applications have received a great deal of criticism in recent years. Most of this criticism has been directed, on the one hand, towards the what are regarded as over-simplifying neo-classical assumptions and, on the other hand, towards particular empirical methods. The assumption of a closed economy, for example, is often criticised as being over-simplistic in the case of a regional economy (Barro et al, 1995). Barro et al. have shown, however, that allowing for full capital mobility and an open economy-version of the basic model does not change the core results. Hence, this presumption, like most other assumptions used in the neo-classical growth theory, is purely a convenient simplification that can well be justified.

One of the main opponents of the neo-classical cross-section approach is Quah (1993), who questions the meaningfulness of convergence concepts, as these do not regard economic growth as a dynamic process, which it inherently is. Hence the present study uses the method developed by Quah to test the robustness of cross-section regressions, and to analyse the dynamic nature of regional growth process. Other criticisms levelled at international growth comparisons do not apply in the regional context used here as there is no possibility for a sample selection bias, nor for a measurement error in initial income levels (De Long, 1988, Dowrick and Nguyen, 1989, Friedman, 1992). On the other hand, the often-cited technical problems, such as those arising from simultaneous determination of certain key variables or possible endogeneity bias (Cho, 1996), can easily be accounted for by using two- or three-stage estimation methods.

As was shown above, many of the criticisms of the neo-classical method can be countered or become irrelevant in a regional context. Moreover,

alternative approaches can be used to complement the cross-section method in order to account for the dynamic nature of the growth process. More advanced estimation procedures can be employed to counter criticisms directed at the use of cross-section data and ordinary least squares (Islam, 1995, Caselli et al., 1996, De La Fuente, 1997). In the present study, for example, panel data analysis is applied in several chapters, as this is argued to be preferable (Islam, 1995). Regardless of these theoretical and methodological disagreements, neo-classical methods continue to be commonly employed in regional economics as they form a perfect starting point for empirical analysis and can easily be adjusted or complemented by other methods to suit various needs.

1.3 Scope of the study and main results

This thesis reports five separate empirical studies, each of which analyses different aspects of regional growth and development. These studies examine several different time-periods and regional levels, and in so doing utilise a variety of empirical methods. Comparisons are made between the empirical findings reported here and earlier studies on similar subjects. The present study seeks to answer several important questions:

1. How does the growth and convergence of regional GDP differ across different levels of regional classification?
2. What patterns of convergence and divergence have gross regional products (GRP) exhibited through time and how have these been related to the patterns exhibited by regional incomes?
3. What role do aggregate economic fluctuations have in changing the regional distribution of GDP, and are certain phases of the aggregate cycle related to convergence at the regional level?
4. What kinds of regions attract net in-migration flows? What does this imply about the role of migration as an equilibrating force in the regional economy?
5. What is the role of migration in the process of regional income growth, and does this role differ between the short- and the long-run?
6. Are there regional differences in the way in which the choice and characteristics of the destination region affect the benefits accruing to migrants from moving?

The present study therefore considers two very important processes shaping the structure of the Finnish regional economy, i.e. regional economic growth and migration. As mentioned above, the resurgence of growth economics was sparked by its application to regional economics in the early 1990s. Similarly, there has been a global interest in the interrelations between regional development and inter-regional migration as, given a high enough volume, migration has a significant effect on the economic structure of both the source and destination regions (Chun, 1996). Therefore, understanding the causes and consequences of migration, as well as its relation to regional growth

is of foremost importance in revealing the long-term nature of change in the regional economy (Figure 1).

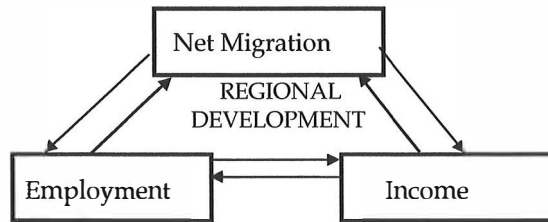


FIGURE 1 Interrelations of three major components of regional development¹

The essays reported in this thesis resolve many questions that have hitherto been left unanswered in the Finnish literature on regional growth and development. Even though there are some studies that have analysed regional growth in Finland (Kangasharju, 1998a, Loikkanen et al., 1998) they have given no consideration to the role of regional migration, the importance of which has been well established in other countries (e.g. Barro and Sala-i-Martin, 1991, Chun, 1996). Similarly, the connection between changes in the aggregate and regional economies have hardly been analysed in the Finnish literature. Moreover, unlike previous studies (e.g. Kangasharju, 1998b), the present study analyses both the growth of gross regional product (GRP) and regional income, both of which are important yet very different measures of regional economic well-being. Finally, one of the main contributions of the present study is that it uses several alternative regional classifications, and shows how different results may arise purely as a result of the choice of regional level. This issue is closely connected to the modifiable areal unit problem and merits much more consideration in future empirical studies on regional economics.

The empirical findings of this study deal with two of the above determinants of regional development, namely incomes and migration, with employment appearing as a determinant of these two. The results concerning economic growth can be summarised as follows:

- 1) Regional growth and convergence was fast until the 1980s, but slowed down, or even stopped, thereafter. Since then regional income disparities remained steady until mid 1990s. The speed of convergence varies greatly across different levels of regional aggregation.
- 2) Changes in regional distribution of GRP are greater during an economic upswing, when a certain degree of convergence occurs. During recession, however, poorer regions find it harder to cope and tend to fall behind, which leads to regional divergence.
- 3) Regional migration only has a minor effect on growth and convergence.

The above results are presented in more detail in chapters 3, 4 and 6. The remaining chapters deal with inter-regional migration, its determinants and consequences for regions and individuals. In summary, the results are:

- 4) Regional net-in-migration is greater the higher the growth of incomes and the larger the share of highly educated inhabitants. A high unemployment

rate, tax rate and share of primary production tend to hinder net in-migration.

- 5) Migration has a converging effect on regional incomes in the short-run, but the effect becomes negative in the long-run, as the human capital and earnings potential of migrants are realised in their destination region.
- 6) Migrating is beneficial in terms of individual income development. The choice and characteristics of the destination region play a crucial part in the extent to which post-move incomes rise.

1.4 The Finnish regional economy from the 1960s to the present day

1.4.1 Overall picture

Throughout its history, Finland has been a sparsely populated country with a low population density in most areas. Urbanisation, however, has continued at a rapid pace ever since it began after the Second World War, and, as a result, high population concentrations can nowadays be found in the major cities (Kiljunen, 1977, Peltola, 1993, and Pekkala and Ritsilä, 1999). During the period under investigation (1960-1995) Finland changed from a predominantly agricultural country into a highly urbanised, service and technology-oriented economy. Indeed, since the 1950s, the population in the central and urban areas has increased from around 2 million to 3.5 million (Loikkanen et al., 1998). Moreover, Finland has become a very open economy, particularly through its membership in the European Union but also as a result of the general trend towards globalisation displayed by virtually all industrialised countries (Okko et al., 1998). These dramatic changes in the economy and environment of Finland have necessarily had their implications for the regional economic structure of the country.

This chapter provides a short summary of the main developments that have occurred in the Finnish regional economy from the 1960s to the present day (table 1). It briefly introduces the changes that have occurred in regional population structure and distribution, regional policy, the welfare state and other important forces shaping the nature of the regional economy. The purpose is to facilitate interpretation of the empirical results presented in the thesis (chapters 2-6) by placing them in a proper context.

TABLE 1 The outline of the history of regional development in Finland

1960s	1970s	1980s	1990s
Uneven regional development and large disparities.	Disparities in regional development decline.	Growing regional disparities.	No decline in regional disparities. Concentrated regional development.
Decline of agricultural sector.	Continuing structural change.	Industrial growth slows down in core regions.	Regional concentrations of high-tech industries.
Era of the "great-migration".	Migration and emigration flows reduced.	"Brain-drain" from peripheral regions.	Migration boom since the mid-1990s.
Official regional policy introduced in 1966.	Regional aspects considered in all political decision making by law.	Diversification of regional problems.	EU regional policy comes into force in 1994.
Emphasis on the industrialisation of development areas.	Broader regional policy and regional planning begins.	Regional policy emphasises technology and innovation.	Programme-based regional policy. EU-specified objective regions.

1.4.2 Regional inequality

Regional inequality can be understood as differences in the quality of life, incomes and consumption among regions. It is most easily measured by per capita income or consumption. As a whole, *overall income inequality* diminished in Finland during the period under scrutiny (Suoniemi, 1998), particularly during 1971-75, a period when taxation was exceptionally heavy. Thereafter, overall relative income inequality remained rather stable, although showing a slight increase during the period 1985-90.

On the basis of a division of four grand regions (NUTS2), Loikkanen et al. (1998) conclude that *regional inequality* (measured by *factor incomes*) actually increased from 1970 to 1995. On the other hand, due to an active re-distributive policy and income transfers regional differences in *disposable incomes* narrowed during 1970-95. This is a result of a welfare state intervention that creates income adjustment through taxation and income transfers. It has been observed that regional inequalities decreased most sharply in the 1970s (Loikkanen et al., 1997, Sullström et al., 1998, Kangasharju, 1998a). The probable cause of this development was the heavy rate of taxation during the period. As mentioned above, income disparities are not the only measure of regional inequalities; the provision of services, for example, also affects regional living standards. When taking into account the subsidised provision of schooling, health care and other services, regional incomes have been narrowing rather dramatically ever since the 1970s (Loikkanen et al., 1998).

The Uusimaa region has played an increasingly dominant role: in 1995 the region produced one third of the national GDP and had one fourth of the population residing within that small area (Sullström et al., 1998). For

comparison, in 1960 Uusimaa produced one fourth of GDP and accounted for merely 18 per cent of the population. Moreover, persisting differences in employment and unemployment rates between southern and northern regions are a commonly acknowledged fact, and even large migration flows have not had a levelling effect on these disparities. Therefore, even though *per capita* inequalities may have narrowed across regions, and also as a whole, absolute regional differences have not displayed a similar trend. Nevertheless, the growth of the welfare state and regional migration among other factors have contributed to a relatively even regional structure during the examination period, when compared to other countries (figure 2 and 3).

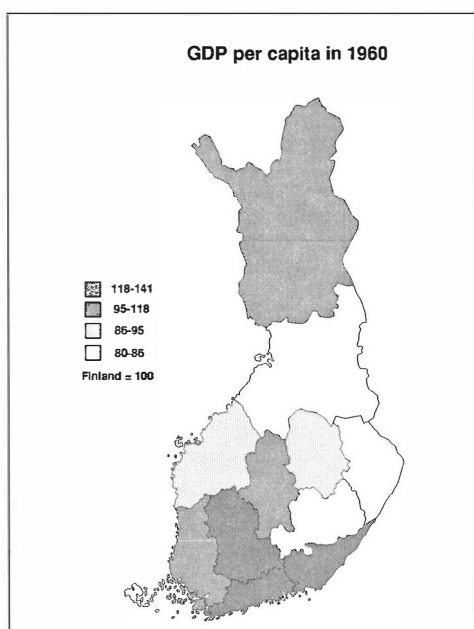


FIGURE 2 GDP per capita in Finland, 1960 (12 provinces)

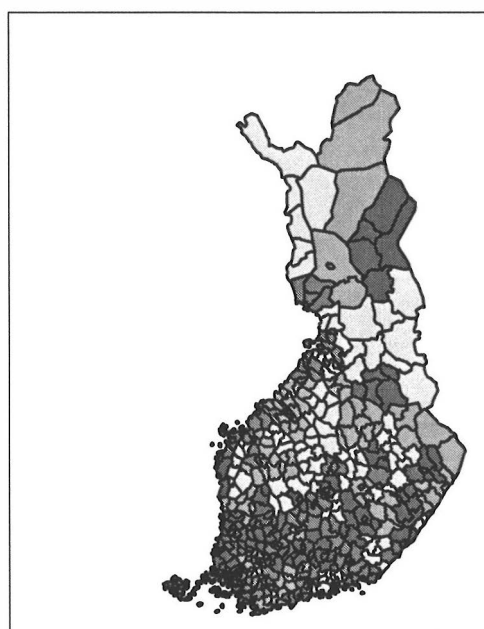


FIGURE 3 GDP per capita, 1998 (455 municipalities): Richer regions are coloured darker, poorer regions are coloured lighter

1.4.3 Patterns and trends of migration

Inter-regional migration flows are seen as one contributing factor in the narrowing of regional disparities, and they have seemingly acted as such a force in Finland, at least during specific periods. As already mentioned, Finland has experienced a continuous trend towards urbanisation, the speed of which has been very rapid at times. The rate of urbanisation has grown from around 40 per cent in 1960 to almost 80 per cent in the 1990s (Kiljunen, 1977, Peltola, 1992). This is the outcome of a continuous migration from peripheral regions towards regional centres. Indeed, during the late 1950s migration flows started

increasing and by 1960 the annual average out-migration from the Finnish municipalities was around 200 000 persons. The 1960s were characterised by the so-called great migration, part of which consisted of the net loss of 143 000 emigrants to Sweden between 1961 and 1970. The direction of internal migration was already then exactly the same as today: people were moving away from rural regions in northern and eastern Finland to (mainly) Uusimaa (Tervo, 1983a, Laakso, 1998).

The peak was reached in the beginning of the 1970s, when as many as 270 000 persons were recorded as out-migrants (figure 4). However, before the mid-1970s the speed of migration and immigration had declined, as did the growth of the urban population (Peltola, 1992). This favourable trend continued until the 1980s, when a new worrying trend in the out-migration of the lagging regions emerged. The largest group of migrants had formerly been unemployed persons shifting away from agriculture, but these were now replaced by young, highly educated persons who started migrating to larger cities in search of jobs and higher standards of living. This development worsened the situation of the lagging regions and regional authorities demanded a prompt policy response to solve the problem. During the economic upswing of the late 1980s discussion turned away from the mobility of labour as migration was actually at a relatively low level, but the topic returned in the 1990s together with the emergence of the "new great migration". During 1995-98 a migration boom occurred, and in 1998 as many as 265 000 persons (five per cent of the population) changed their municipality of residence.

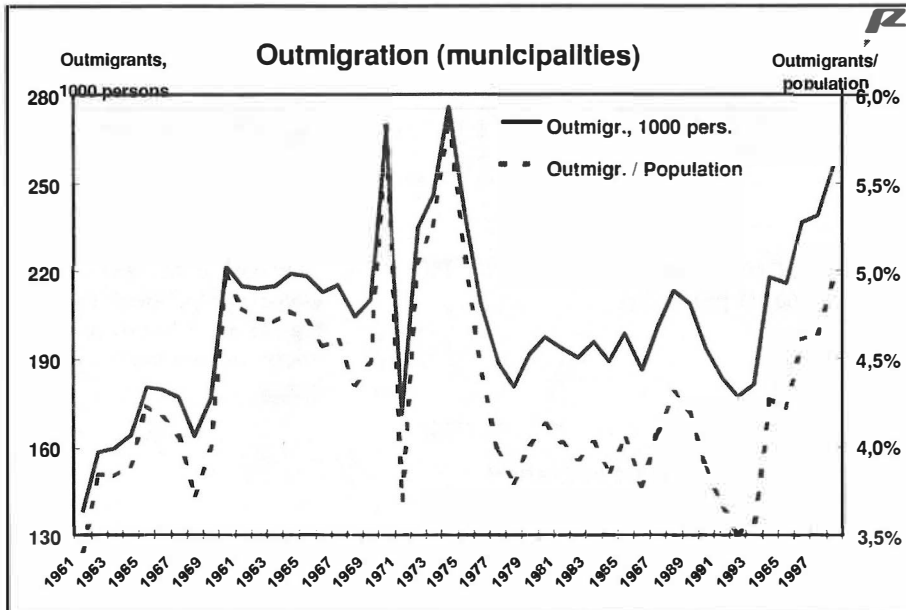


FIGURE 4 Out-migration between Finnish municipalities, 1950-95

Such a profound flow of migrants will necessarily affect regional population structure, especially if the selection of destination regions is a narrow one. Indeed, it can be shown that the number of regions obtaining a positive net-flow of migrants decreased throughout the examination period (Pekkala et al. 1999). And recently, following the publication of the latest statistics showing that only 6 growth centre regions received a net in-migration of over 2 per cent per annum, many politicians and regional authorities have expressed their fears about the excessive regional concentration of migrants. If the development continues to follow the pattern of 1995-98, when only 11 regions out of 85 received any positive net in-migration at all (figure 4), such fears may be justified. For these reasons inter-regional migration has come to be a very popular subject of study, and analysing the causes and consequences of mobility is an important task.

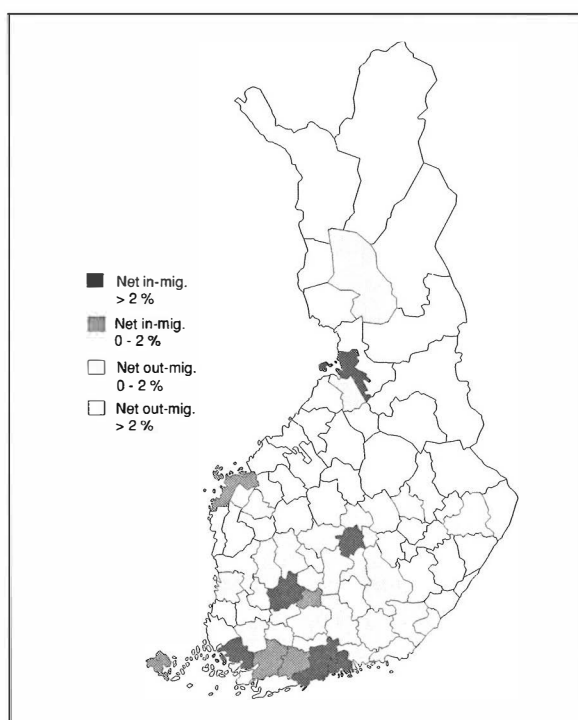


FIGURE 5 Net in-migration between Finnish subregions, 1995-98

1.4.4 Regional policy

Aside from migration, the structure of the Finnish regional economy has been heavily influenced by active regional policy measures since the 1960s (Tervo, 1991). Finnish regional policy has traditionally aimed at balancing the use of national resources, attracting economic activity into lagging regions, maintaining equal standards of living and employment opportunities in all regions and securing the efficient operation of market forces (Kiljunen, 1977).

Some of these aims were given expression in the first regional policy legislation that came into force in 1966. Both the aims and means of regional policy have undergone considerable modification and extension since those early days, in response to both the changing regional problems and, lately, EU membership. The development of regional policy can be divided into six phases:

Phase 1 (1966-69):

A systematic regional policy began in 1966, before which regional policy was implemented as a part of a broader employment, social and industrial policy. The first regional policy laws were directed at supporting the designated development areas (Viiri, 1997). The act established two major zones, which included 7 of the most northerly provinces of Finland (Regional Policy Report, 1983). The emphasis was on creating incentives leading to the formation of new industrial enterprises in lagging regions (Tervo, 1985a, Okko, 1989).

Phase 2 (1970-75):

The Regional Fund (KERA) was established in 1971 to allocate development grants (Tervo, 1991). The emphasis was still mainly on locating industry in development areas, and interest subsidies and transport support were offered as new instruments (Regional Policy Report, 1983). The aim was to create a network of regional growth centres that would act as fuel to regional growth (Viiri, 1997).

Phase 3 (1976-81):

In 1976 additional development areas were introduced, bringing the whole country within the ambit of regional policy by the 1980s (Regional Policy Report, 1983) and treating rural and agricultural areas with greater care. Moreover, regional aspects were to be considered in all political decision making (Viiri, 1997). The aim was to control the location choices of enterprises and public services by using financial inducements and increasing the amount of support (Tervo, 1985a, 1991).

Phase 4 (1982-88):

The 1980s were characterised by a profound structural change in Finland that treated regions very differently (IM Report, 1991²). Therefore, a conception of "three Finlands" was introduced: rural, industrial and high-tech Finland, and the country was divided into four basic policy zones. (Tervo, 1985a and 1991). Regional policy shifted more towards efficiency criteria and was based on development programs (Hult, 1993). At first, the main aim was to spread public decision making and administration more evenly throughout the country, but by the end of this phase it was recognised that rather than re-locating public activities, sustainable growth in development areas could only be attained if peripheral regions improved their skill level and utilised their own strengths.

Phase 5 (1989-93):

The increasing openness of the Finnish economy and the pressures of global competition meant that the goal of efficiency became even more important relative to the goal of equality (Niittykangas, 1993). As a result, funds were directed at projects that were competitive and supported local

know-how (IM Report, 1991). The activity of the development regions themselves became increasingly important and the co-operation of local actors was seen a key force in regional developing (Viiri, 1997). Towards the end of the phase Finland started to prepare for membership of the European Union, with the corresponding repercussions for regional policy legislation.

Phase 6 (1994-):

The latest regional policy laws conform to EU regional policy. The emphasis is now on regional developing instead of subsidies and income transfers, and the policy is based on objective programmes. The efficiency of regional policy measures was improved (IM Report, 1991) and efficiency goals were also emphasised in terms of market functioning (Viiri, 1997). It was recognised that all types of regional structures have their weaknesses (Niittykangas and Tervo, 1995) and hence the country was divided into 3 levels of objective areas. New key strategies for regional development are the decentralisation of decision making and economic activity, creating new knowledge, supporting innovations and technological advancement, provision of education and creation of technology centres supported by regionally based business services (Hult, 1993, Niittykangas and Tervo, 1995, Viiri, 1997). The effects of this "new regional policy" are not yet known, but the greater role for regions individually has increased the general interest in regional developing (Tervo, 1996a).

Ever since the beginning of an active regional policy the number of regions receiving support has grown and the variety of policy means has continued to expand. On the other hand, the amount of direct investment subsidies has decreased, and policy goals have become more oriented towards qualitative regional development. As noted above, this has given the regions themselves a greater role, one which allows for the consideration of regional strengths and weaknesses in policy implementation. In particular, the agricultural regions have been given special consideration, with the adoption of rural policy as a special branch of regional policy in 1991. (Niittykangas, 1993)

As the above shows, regional policy goals and implementation shifted several times during the period 1960-95, most likely largely in response to (and also contributing to) changes in regional economic structures and disparities. Compared to many other European countries the Finnish regional structure has been relatively even, and, in addition to enthusiastic regional policy, the setting up of the welfare state can be seen as a contributory factor in the creation of the narrow regional inequalities. Hence, the practice of using the welfare state institutions together with traditional regional policy instruments in order to generate greater regional harmony is often referred to as "the broad regional policy" (Tervo, 1991).

1.4.5 Regional effects of the welfare state

Traditionally, the institutions of the welfare state have preserved a reasonable level of employment and regional income in all regions, even during severe economic recessions. In the 1980s, public sector employment in Finland was growing by around 17 - 23 000 persons per annum, and by the early 1990s some 770 000 employees were working in public sector professions (IM Report, 1991). The importance of public sector employment has generally varied across regions; in 1990, for example, in some provinces as much as a third of the labour force worked in the public sector (table 2). It can also be seen that the share of public employment has expanded considerably relative to private employment.

Ever since the early 1960s the growth of the public sector has been noticeable particularly in those provinces where it has traditionally played a large role, i.e. the poorest regions (Peltola, 1986). However, the vast expansion of the public sector had ceased by the early 1990s, since, in a situation where labour was scarce, private sector employment was unable to grow as fast as desired. The great recession hit most regions in 1991, when the growth of employment in the public sector came to a halt, and during 1991-95 the number of public sector employees fell dramatically as a result of rationalisation measures (Myrskylä, 1999, Pohjola, 1999). The share of public sector employment grew, however, since the number of jobs in the private sector fell even more.³ Since 1995 more jobs have been created in public services, particularly at the municipal level, even though much of this can be explained by regional employment support programmes.

TABLE 2 Public sector employees (% of labour force) per province, 1976-95⁴

Province	1976	1978	1982	1990	Region ⁵	1995
Uusimaa	16.4	18.1	18.6	19.6	Uusimaa	28.6
Turku and Pori	14.0	16.3	17.8	21.0	V-Suomi	25.4
Häme	13.9	16.3	17.7	21.2	Satakunta	24.2
Kyme	17.6	19.3	20.5	23.8	K-Häme	27.9
Mikkeli	15.3	16.9	18.2	23.7	Pirkanmaa	25.0
P-Karjala	17.6	20.7	21.3	29.2	P-Häme	23.0
Kuopio	15.8	18.1	19.2	25.2	K-Laakso	25.4
K-Suomi	16.8	18.6	19.8	25.8	E-Karjala	25.6
Vaasa	13.4	14.7	15.9	20.8	E-Savo	28.4
Oulu	20.6	22.6	24.0	27.6	P-Savo	31.8
Lappi	21.1	24.5	26.9	32.3	P-Karjala	32.9
Ahvenanmaa	14.4	15.5	17.9	20.0	K-Suomi	31.2
					E-Pohjanmaa	23.8
					Pohjanmaa	27.9
					K-Pohjanmaa	25.7
					P-Pohjanmaa	31.2
					Kainuu	33.8
					Lappi	35.6
					Ahvenanmaa	27.1
TOTAL:	15.8	17.8	18.9	22.3		28.0

Another indicator of the regional importance of welfare state institutions is the proportion of GDP produced via public sector activity. From the early 1960s the share of the public sector in national GDP increased dramatically and in the

1970s the public sector was a major growth sector, especially in the lagging regions (Okko, 1989). This growth continued until the late 1980s, after which the expansion programmes in the development areas were largely completed. As a result, the share of GDP of the public sector has always varied greatly across the Finnish regions, and the variance is the greater the smaller the regional unit.⁶ Therefore, those regions that were most dependent on public sector activities suffered the most as a result of the 1990s recession, when the share of the public sector in the regional and national GDP started to fall in 1991 and 1992. Moreover, even though the intention was to create a regionally neutral savings programme (Pohjola, 1999), the decline was greatest in the poorer regions situated in the northern and eastern parts of the country (Alanen, 1996).

The importance of public sector activity has remained high throughout the period under scrutiny. By 1996 the public sector was the largest industry in Kainuu, and the second largest in Pohjois-Karjala and Pohjois-Savo, for example (ETLA-PT-PTT Report, 1999). All these regions are among the poorest in the country. The equilibrating role of the public sector is also apparent from the regional division of public expenditure (table 3). Per capita public expenditure is greatest in most of the poor regions and hence many of the relatively rich regions become "losers" in the sense that they account for a larger share of public sector income than they receive back through the budget.

TABLE 3 Public expenditure per capita (FIM), by region⁷

Province	1978	1986	1990	Region ⁸	1994
Uusimaa	7 238	18 710	24 926	Uusimaa	32 886
Turku & Pori	5 885	13 798	20 599	V-Suomi	29 441
Häme	5 594	13 877	20 137	Satakunta	26 070
Kymi	5 976	13 922	20 570	K-Häme	35 070
Mikkeli	6 778	16 610	23 110	Pirkanmaa	27 537
P-Karjala	8 067	19 799	27 519	P-Häme	24 357
Kuopio	7 496	18 723	25 844	K-Laakso	27 985
K-Suomi	7 418	17 273	25 337	E-Karjala	28 244
Vaasa	6 976	16 053	24 293	E-Savo	31 585
Oulu	8 323	19 218	27 121	P-Savo	32 394
Lappi	9 491	22 746	32 581	P-Karjala	34 978
Ahvenanmaa	11 436	21 208	28 711	K-Suomi	35 152
				E-Pohjanmaa	30 677
				Pohjanmaa	29 534
				K-Pohjanmaa	33 821
				P-Pohjanmaa	33 613
				Kainuu	37 391
				Lappi	40 406
				Ahvenanmaa	38 248

In conclusion, the growth of the public sector created favourable conditions for regional cohesion, particularly in 1960-90, as it offered employment for the otherwise under-exploited labour force in the lagging regions and assisted rural regions in overcoming the extensive structural change away from agriculture that had been taking place since the 1950s. Unfortunately, the decline of public sector growth in the late 1980s and early 1990s made it difficult for the poorer regions to cope with increasing unemployment and decreasing incomes. Moreover, the future growth of the public sector seems very unlikely, since EU

membership requires greater efficiency and savings to be made in that sector (IM Report, 1991).

1.4.6 Structural change

The rapid structural change experienced by an originally agrarian, rural Finland since the 1950s was one of the greatest forces shaping the regional economy during the period 1960-95. The share of agriculture dropped from 35.6 per cent in 1960 to a mere 12.9 per cent in 1980 (Peltola, 1986), and further to 5.7 per cent in 1995. Simultaneously, the share of services more than doubled. These changes can be explained as a shift in the production paradigm from an agricultural paradigm directly to a post-industrial, information- and service-oriented one (Okko, 1989). However, even though the structure of employment shifted directly from the primary to the tertiary sector, the secondary sector played a marked role in spreading industrial activity throughout the country (Regional Policy Report, 1983, Tervo, 1985b).

In 1960 agriculture was the dominant industry in the peripheral areas (52.7 per cent), whereas in the central regions its share was only 23.1 per cent. The regional industrial structure converged rapidly thereafter, and the 1970s and 1980s particularly were a time of rapid structural change. The proportion of the regional labour force employed in manufacturing varied between 28 and 38 per cent in 1970, whereas the range was only 24-29 per cent in 1995 (Poropudas, 1998). The public sector played a marked role in this convergence process since it employed persons who were made redundant by the decline of primary production.

Contrary to earlier decades, the accelerating process of structural change led to increasing regional disparities in the late 1980s (Lahdenperä, 1987). The rapidly expanding, knowledge dominated industries (information services, R&D, marketing and financial services) were largely concentrated in the relatively rich central regions (Niittykangas and Tervo, 1995) and, despite being more equally spread than before, manufacturing industry was more quality-oriented in southern Finland (Tervo, 1985b). This development was further enhanced by the 1990s recession, during which many jobs in the already declining industries were lost (Mikkonen, 1996). At present, Finland is living through a post-industrial phase in which regional disparities in knowledge and education are highlighted by the location choices of high-tech industries (Niittykangas and Tervo, 1995). These rapid, fundamental changes in regional sectoral structures have influenced the regional balance ever since the 1950s, and are likely to continue doing so in the future.

1.4.7 Employment and unemployment

Many studies have shown that regional unemployment disparities are a relatively persistent problem in Finland (Tervo and Pehkonen, 1995 and 1998, Kangasharju et al., 1999). On the other hand, regional employment rates have also traditionally varied, despite the considerable, and initially successful,

attempts through regional policy to create new jobs in development areas (Tervo, 1983a and 1983b).

The level of unemployment grew from practically zero in the 1960s and mid 1970s to around 20 per cent in the mid 1990s. Even though unemployment was very low in the period 1960-75, there were already then clear differences between the northern and southern regions (Regional Policy Report, 1983). Unemployment started to rise rapidly in 1978, but regional differences remained constant, or even narrowed, until 1990 (Kangasharju et al., 1999). Nevertheless, regional disparities in unemployment appear to be difficult to eradicate, and they have ranged as follows (Tervo and Pehkonen, 1995):

1963-75: 1.0 - 4.8 %
 1976-90: 3.0 - 11.3 %
 1991-93: 8.9 - 25.2 %

And, comparing these to the latest figures, there seems to be no convergence occurring in terms of regional unemployment rates (Kangasharju et al., 1999, ETLA - PT - PTT -Report, 1999):

1997: 3.1 - 23.6 %
 1998: 1.4 - 19.8 %

Regional unemployment disparities are considered problematic since they reflect economic inefficiencies in the use of resources, and may lead to regional inequalities in economic welfare in the long run. In principle, labour migration should equalise such unemployment differences. Indeed, it seems that this was the case during the 1960s and 1970s when rural-urban migration shifted under-used labour away from areas where unemployment was high, i.e. the agricultural regions. However, the role of migration in evening out unemployment has been questioned recently as it seems that despite large numbers of migrants currently flowing into the central regions this process has not been able to narrow unemployment disparities (Kangasharju et al., 1999). Hence, regional employment and unemployment differences remain a persistent phenomenon that is extremely difficult to alleviate by policy means or via labour mobility. These differences are both the cause and consequence of other changes in regional economic structures, as will become apparent later in this study.

1.5 Conclusion

This chapter has presented a general view of the developments that have taken place in the regional economic environment during 1960-95. Understanding that the regional structure has been continuously shaped by a variety of processes enables the following empirical analyses to be seen in context.

The results presented above give a picture of Finland as a country where regional disparities, measured by per capita GRP or income differences, have diminished considerably since the 1960s. As a result, Finland displays a relatively even regional structure compared to many other European countries. The rate at which relative regional disparities have narrowed, however, has

fallen throughout the period under scrutiny, and the absolute differences among regions have not declined at all. Moreover, differences measured by the concentration of population and economic activity have widened noticeably since the 1960s, as shown above. Hence, regional disparities continue to exist in Finland and are not likely to experience any radical decline in the near future; in fact the newly increased speed of migration together with membership of the European Union may actually exacerbate regional disparities (Tervo, 1996b and 1997).

Possible reasons why convergence of GRP and incomes was so rapid up to the 1980s but virtually non-existent thereafter are not difficult to find. Firstly, this development was part of a rather universal trend, and may therefore be connected in changes in the world economy. Explanations for the world-wide trend have been sought, for example, in the agglomeration literature arguing that the centralising forces have become stronger over the past two decades (together with increasing economic integration), which has led to concentrations of economic activity in a few core regions (Krugman, 1991).

Moreover, the vast increase in the mobility of labour that occurred in Finland in the 1960s and early 1970s may explain why convergence continued until the late 1970s, after which the long-run (cumulative causation) effect caused regional divergence. Another observation was that in the 1980s migrants consisted mainly of young, educated people (i.e. human capital) and their migration away from the lagging regions did not improve the situation of those areas unlike in earlier decades when the unemployed formed the main share of out-migrants (Lahdenperä, 1987).

Yet another reason why convergence occurred up until the 1980s could be the timing of structural change in Finland. In other words, regional industrial structures were converging until the late 1970s when labour was shifting away from the agricultural sector and into the industrial and tertiary sectors (Regional Policy Report, 1983). This structural convergence ceased in the late 1970s and it may have manifested itself as the end of the income convergence era.

Regional policy is a further force that has brought about convergence in the Finnish regional economy by locating economic activities in peripheral regions. However, in the early 1980s a change of policy occurred, from one of supporting only the most lagging regions, to a more varied approach where the whole country was taken as the target area. Moreover, policy funding declined somewhat, and together these developments may have caused some increase in regional disparities (Lahdenperä, 1987). Finally, the setting up and preservation of the Scandinavian welfare state is likely to be one of the central forces in the rapid convergence process that took place in Finland. Until the 1980s the share of the public sector was growing especially in the peripheral regions (Peltola, 1986), but public sector employment declined in the 1990s, and some signs were already visible in the 1980s. This could partly explain the convergent economic growth in the period 1960-80, and the end of convergence in the mid 1980s.

The effect of the aggregate business cycle on regional growth patterns and relative growth differences is also studied here. It was found that regional convergence and divergence are related to particular stages in the business

cycle. When the aggregate economy is experiencing an upturn, regional convergence is more likely and the regional income distribution changes rapidly. This was certainly the case during 1988-95, but it should be noted all cycles may not be identical. Audas and McKay (1997) suggest that all recessions may not have identical effects on the regional economy. It could, indeed, be argued that the recession of the 1990s was a very exceptional one in the Finnish context. Nevertheless, it seems that poorer regions find it very difficult to keep up with the economic development of the rich regions during slumps, and therefore recessions may lead to regional divergence. This finding bears important implications in terms of regional policy planning, if the aim is to promote a more even regional development.

A final remark should be made about inter-regional migration, the recent expansion of which has caused much concern in many peripheral regions. The theoretically appealing argument that migration might equalise regional incomes and lead to smaller regional differences is obviously not of much comfort to those regions that lose much of their educated, productive labour and are left to cope with an ageing population. The present study suggests that even though migration may have converging effects in the short-run, the long-run effects are likely to be divergent. The reason for this is that regions that have a low level of unemployment, high level of education, faster growth of incomes and a low tax level are attractive to migrants. On the other hand, agricultural regions are less attractive and tend to lose their labour. It is therefore understandable that these attractive regions draw highly educated migrants who, after a while, start utilising their productive capacity and generate faster income growth in those regions. This produces a cumulative causation growth pattern that tends to reinforce the existing regional growth poles at the expense of the more backward regions.

To conclude, many of the above factors affecting regional development have been analysed in the present study, or are implicitly taken into account when interpreting the results. However, scope for further research exists, particularly in the area of regional policy and the welfare state. To take into account the effect that these two mechanisms have on regional growth is certainly a difficult task, but the knowledge gained would be valuable and could have a significant impact on planning and evaluating regional and social policies.

The following five chapters present the five empirical studies the main findings of which were briefly introduced above. These analyses were designed to have a very narrow focus and concentrate in modelling a single economic phenomenon. It should be borne in mind that although separating one phenomenon from its context is necessary here, it is nonetheless important that interpretations are made against the spatial and temporal background outlined above.

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Notes:

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- 1 Adapted from Chun (1996) who analysed these interrelations in the context of the US economy. Previous studies supporting the existence of such relationships are, for example, Borts and Stein (1964), Muth (1968), Greenwood (1976), Mead (1982) and Mills and Carlino (1985).
- 2 This refers to the regional policy report compiled by the Ministry of Internal Affairs of Finland (Sisäasiainministeriö) and is henceforth referred to as the IM Report (1991). See also the references.
- 3 The total number of jobs fell from around 2.29 million to a mere 1.93 million between 1990 and 1995. The decrease in the number of employees was particularly severe in the government sector where there were 149 500 jobs in 1990 and only 144 700 in 1995 (Statistics Finland Regional Accounts, 1990, 1995).
- 4 Data for this table are obtained from Statistics Finland Regional Accounts, 1976-96. Information on the share of public sector activities is not available at the regional level prior to 1976, and it should be noted that the figures displayed here may not be fully comparable.
- 5 The regional classification used in regional accounting changed from 12 provinces to 19 regions and 85 subregions, and only the new classification is available in 1995. Therefore, directly comparing 1990 and 1995 is not possible, but the results are obtained by roughly aggregating from the subregional level.
- 6 For example in 1994 the share of the public sector of regional GDP was almost 40% in the subregions of Rovaniemi and Ylä-Lappi, and only 10% in Salo and Kaakkois-Pirkanmaa (Alanen, 1996).
- 7 The figures displayed in this table have been obtained from Statistics Finland and have been aggregated across industries by Aku Alanen.
- 8 As in table 2, the regional classification changed after 1990. Therefore, the 1978-90 figures are provincial aggregates and 1994 figures are regional ones.

2 REGIONAL CONVERGENCE ACROSS THE FINNISH PROVINCES AND SUBREGIONS, 1960-94*

Abstract

Pekkala, Sari

Regional Convergence across the Finnish Provinces and Subregions, 1960-94. Finnish Economic Papers, 12, 28-40.

This paper analyses the convergence of regional products in Finland using two different data sets. Firstly, β - and σ -convergence was estimated for the 12 Finnish provinces during 1960-94. Convergence was found to be strong in 1960-80, but after 1980 regional disparities started growing again. Secondly, a similar study was conducted for the 88 small-scale subregions in 1988-94. As with the provinces, the subregions' relative growth performance and cross-sectional convergence dynamics were evaluated using Markov chain transition matrices. No clear evidence for σ - or β -convergence was found here, but the dynamic analysis revealed a rapidly evolving distribution of gross regional products. Thus the type of regional classification and method used can markedly affect the results obtained in a convergence study.

Keywords: gross regional product, convergence, province, subregion

http://www.taloustieteellinenyhdistys.fi/images/stories/fep/f1999_1c.pdf

* This paper has been published as Pekkala S. (1999) Regional Convergence across the Finnish Provinces and Subregions, 1960-94. Finnish Economic Papers, 12, 28-40. An earlier version appeared with the same name as School of Business and Economics Working Paper 182/98, University of Jyväskylä. The paper has also been published on the ERS98 Congress CD-ROM.

3 AGGREGATE ECONOMIC FLUCTUATIONS AND REGIONAL CONVERGENCE: THE FINNISH CASE 1988-95*

Abstract

Pekkala, Sari

Aggregate Economic Fluctuations and Regional Convergence: the Finnish Case, 1988-95. *Applied Economics*, 32, 211-220.

This paper analyses the connection between aggregate economic fluctuations and regional productivity convergence in Finland during 1988-95. Markov chain transition matrices and mobility indices were used to examine the regional distribution of productivity. The results indicated that high intra-distribution mobility occurred during booms, when regional convergence potential was also at its highest. Conversely, recession years were characterised by much lower mobility and a more divergent regional pattern. These findings bear important implications in terms of regional policy planning, as it seems that poor regions do not manage to keep up with the rich ones during slumps, whereas regional disparities diminish naturally during boom years.

Keywords: economic fluctuations, regional convergence, intra-distribution mobility, mobility index

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* This paper was published in *Applied Economics*, 32, 211-220. An earlier version has been published as Pekkala S. (1998) *Aggregate Economic Fluctuations and Regional Convergence: The Finnish Case, 1988-95*. University of Jyväskylä, School of Business and Economics, Working Paper 185/98. Another version with the same name appeared in a book: Alanen (1999) (ed.) *Structures and Prospects of Nordic Regional Economies*. Stockholm: Nordregio.

4 A MACROECONOMIC ANALYSIS OF REGIONAL MIGRATION: FINLAND, 1975-95*

Abstract

Pekkala, Sari

A Macroeconomic Analysis of Regional Migration: Finland, 1975-95. Pekkala, Sari. Ritsilä, Jari. *Review of Regional Studies*, 29, (forthcoming).

This study analyses regional migration in the 85 Finnish sub-regions during the period 1975-95 using data on net in-migration rates. Both cross-section and panel data methods are employed. The regression analysis reveals that the direction of net in-migration flows can be explained by a set of regionally differing characteristics. Unemployment rates, tax rates and the share of primary production affect net in-migration negatively, whereas the share of high education and the growth of regional incomes have a positive effect. This indicates that regional disparities may not be alleviated by migration, but there is some evidence for a cumulative causation growth pattern induced by net in-migration flows.

Keywords: Migration, panel data, unemployment

<https://doi.org/10.52324/001c.8835>

* This paper has been published in the *Review of Regional Studies*, 29. An earlier version was published as Pekkala S., Ritsilä J. and Moisio A. (1999) *Regional Migration and Disparities: Evidence from Finland, 1975-95*. University of Jyväskylä, School of Business and Economics Working Paper 192. Sari Pekkala is responsible for collecting and manipulating the data. Statistical estimation, writing the theory and interpreting the results have been done jointly with Jari Ritsilä.

5 THE EFFECT OF MIGRATION ON REGIONAL CONVERGENCE: SHORT-RUN VERSUS LONG-RUN*

Abstract

This paper analyses the connection between inter-regional migration and income convergence in Finland, 1975-95. Convergence of per capita incomes was fast across the 85 subregions, especially before 1985. The long- and short-run effects of migration to β - and σ -convergence are analysed by cross-section and panel data methods and estimation results are compared. When only the short-run effects are accounted for, the panel data model reveals a convergent role for migration in terms of both β - and σ -convergence. Conversely, in the cross-section regressions, i.e. the long-run model, migration seems to have had a relatively small but divergent effect in the regional growth and convergence process. These findings suggest that even though migration may act as an equilibrating force in the short-run, it does have a tendency to exacerbate regional disparities over the long-run.

Keywords: subregions, β -convergence, σ -convergence, migration, panel data

<https://www.ptt.fi/media/liitteet/tp12.pdf>

* Resubmitted to *Regional Science and Urban Economics*, May 2000. An earlier version was published as *Migration and Regional Convergence, 1975-95: A Panel Data Approach*. Pellervo Economic Research Institute Working Paper 12/98. A Finnish version was published as *Muuttoliike ja konvergenssi Suomessa, 1975-95*. *Kansantaloudellinen aikakauskirja*, 95, 1 ("Journal of National Economics, 95, 1"). The paper was presented at the 1999 Southern Regional Science Association congress in Richmond, Virginia. Sari Pekkala is the first author of this paper and responsible for all empirical work and most writing. Aki Kangasharju assisted in some of the writing, interpreting the results and derived some of the empirical equations.

6 MIGRATION AND INDIVIDUAL EARNINGS IN FINLAND: A REGIONAL PERSPECTIVE*

Abstract

Attention has recently focused on the rapidly increasing pace and regional concentration of migration in Finland. Worries have been expressed about its possible repercussions on regional differences in income and population structures. This study investigates the effects of moving on individuals, and compares these effects across the Finnish regions. Significant regional differences in the types of in-migrants and their income development are observed. The results indicate that, in general, migrants tend to benefit from moving in the form of higher post-move incomes. In particular, individuals who move to relatively rich regions obtain higher levels of income succeeding the move and also experience faster income growth. Those moving to poorer regions generally have lower incomes, yet moderate income growth. These findings indicate that migration contributes to changing regional balance in Finland, acting primarily as a dis-equilibrating mechanism.

Keywords: migration, regional economy, taxable incomes, income growth

<https://doi.org/10.1080/00343400120099825>

* This paper has been resubmitted to *Regional Studies* (August 2000). A previous version has been presented at the European Regional Science Association congress in Dublin, 1999, and published on the ERSA99 CD-ROM. The present version was published as University of Jyväskylä, School of Business and Economics Working Paper 211.

7 CONCLUSIONS

7.1 Discussion and conclusions

This thesis consisted of an introductory chapter and five empirical papers that analyse regional development in Finland from the perspective of economic growth and migration. The introduction presented both the theoretical framework used and the empirical context in which the five studies are conducted. It came to the conclusion that the structure of Finnish regional economy has evolved enormously from the 1960s to the mid-1990s, the period covered by the empirical chapters. In that light it is easy to interpret many of the interesting findings of the present thesis.

The first empirical chapter forms a basic descriptive framework for analysing regional convergence. Traditional growth analyses were performed using two different data sets, and the commonly used methods (Barro and Sala-i-Martin, 1991) were complemented by alternative ones (e.g. Quah, 1993a and 1993b). Results were compared both across different levels of regions, different concepts of regional "prosperity" and different methods. It was shown that convergence has occurred until the 1980s, after which the favourable regional development came to a halt. Moreover, it seems that the regional classification used tends to affect the convergence results, and that in cases where the cross-section approach is uninformative, alternative methods may reveal rapidly evolving patterns of regional growth. Finally, convergence and divergence trends in gross regional products (GRP) seem to be rather closely followed by those of regional incomes (see Ch. 5 and Kangasharju, 1998a and 1998b).

Reasons why regional convergence did not continue past the early 1980s were pondered already in the introductory chapter. Possible reasons could be, for example, the shift in the aims and emphasis of regional policy towards greater efficiency orientation, the slowing pace of regional migration and its concentration to more highly educated, younger persons. Moreover, convergence in industrial structures across regions was fast in the 1960s and 1970s, but not so much in the 1980s - a fact that may have accounted for the decline in the speed of GRP convergence. Further research would be needed to

better understand the effects of, for example, regional policy and welfare state on regional development patterns.

As the first empirical chapter also demonstrated, the speed of convergence may vary drastically across time periods. One reason for this could be the periodic occurrence of economic fluctuations, i.e. booms and recessions. Hence, the second empirical chapter concentrated on the effect of economic fluctuations on regional development. The main finding was that the evolution of inter-regional income distribution changes over the business cycle. Convergence and considerable changes in regional income distribution occurred during economic upswings, but the situation was reversed in downswings. To understand the dynamics behind this phenomenon, further research should be conducted, paying particular attention to the recession period, 1990-93. Nevertheless, above results support the conclusions made in chapter 2: The choice of an examination period is likely to affect the result of any convergence study to a considerable extent.

This thesis aimed at describing the evolution of the Finnish regional economy from several different viewpoints. The choice of different angles was not simple: regional structure is constantly shaped by a variety of forces (see Ch. 1). However, most regional economists seem to agree that inter-regional migration is one of the most important forces affecting the structure of regional economy. On the other hand, migration also responds to changes in regional employment opportunities and economic wellbeing. It is therefore important to understand which economic factors determine the direction and magnitude of inter-regional migration flows. Hence, the empirical study presented in chapter 4 considers the most important macro-economic determinants of inter-regional net in-migration and discusses their implications in terms of the regional income structure. The main finding was that migrants move to regions where higher education is abundant and where income growth is faster. The latter suggests a two-way relationship between migration and growth. Further research, together with larger data sets, is necessary to confirm other possible two-way relationships that migration may have in the regional economy.

The two-way relationship of migration and regional income growth was further studied in the next empirical chapter, which concentrated on analysing the effect of migration on regional convergence. As the neoclassical theory suggests, migration should have an equilibrating role in terms of regional income disparities. However, this argument seems somewhat counterintuitive in the light of the findings presented in chapter 4 and considering that most migrants are highly productive and head towards the prosperous regions. Therefore, the long-term effect of migration might in fact be quite the opposite to that commonly assumed (i.e. the short-term effect). All in all, the results presented in chapter 5 support this intuition and complement those presented in earlier chapters: the development of inter-regional income disparities is affected by (and affects) a multitude of other determinants of regional structure, a fact that may affect the robustness of the results. However, further research needs to be conducted in order to study the short- versus long-term effects of migration in more detail, as chapter 5 only proposed one way of addressing the matter.

The two-way relationships displayed by many macroeconomic variables make studying inter-regional migration somewhat difficult, and may even make the results less robust, as noted in chapters 4 and 5. Moreover, migration is most clearly based on individual decision-making, a fact that cannot be accounted for by macroeconomic variables. Therefore the final empirical chapter seeks to find microeconomic evidence for the empirical findings presented in previous chapters. Furthermore, the chapter analyses the possible regional differences in the types of migrants and their post-migratory income prospects. Indeed, it seems that there are clear differences between regions in terms of the in-migrant groups and the income development of these in-migrants. Moreover, migrating may not produce significantly higher levels of incomes (compared to stayers), yet the positive impact on income growth tends to be noticeable. Here, again, future research will prove whether a more dense regional classification would produce different the results (long-distance migration is different from short-distance moving), and whether considering family income, instead of individual incomes, would profit further insights. When comparing the findings presented above to previous chapters, we note that migration seems to have an impact both on individual and regional incomes. The impact on regional incomes is relatively small, though, (as noted in chapter 5) because migrants generally come from low-income groups (students, youth, unemployed).

To conclude, this thesis has provided a comprehensive description and analysis of regional development trends that have taken place in Finland towards the end of the 20th century. As shown above, however, there are still multiple avenues for future research that would further complement the picture presented here. In particular, the latest trends in inter-regional migration are likely to lead to greater concentration of population and economic activity in only a handful of growth centre regions. This rather universal phenomenon (Krugman, 1991; Fujita et al., 1999) deserves attention from regional economists as well as specialists from other fields of science. The future will show whether the current centripetal development will lead to greater or lesser economic and social wellbeing.

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SUMMARY IN FINNISH (TIIVISTELMÄ)

Tämä väitöskirja esittelee viisi empiiristä tutkimusta, jotka tarkastelevat alueellisen kehityksen eroja Suomessa useasta näkökulmasta. Tutkimuksen pääpaino on taloudellisen kasvun ja konvergenssin analysoinnilla, ja toisaalta muuttoliikkeen roolin tarkastelulla tässä yhteydessä, sillä muuttoliike on yksi keskeisimmistä aluekehitykseen vaikuttavista tekijöistä. Muuttoliikkeen syiden ja vaikutusten tarkastelulla onkin yksi keskeisimmistä sijoista seuraavissa kappaleissa. Ensisijaisesti tässä tutkimuksessa pyritään kuitenkin selvittämään mitkä tekijät ovat johtaneet alueellisten erojen pienenemiseen ja kasvamiseen eri vuosikymmeninä.

Johdannon jälkeen esitellään suomalaisen aluekehityksen yleispiirteitä 1960-luvulta lähtien. Alueellisen kehityksen kannalta tärkeimpiä tekijöitä ja kehitysvaiheita kuvaillaan, jotta saataisiin riittävä näkemys niistä taustatekijöistä joiden yhteyteen seuraavat empiiriset analyysit liittyvät. Katsaus käsittelee aluepolitiikan, toimialarakenteen, rakennemuutoksen, alueellisten kehitys- ja tuloerojen, muuttoliikkeen ja väestöjakauman kehityksen vaiheita 1960-luvulta lähtien.

Katsauksen jälkeinen empiirinen tutkimus analysoi alueellisen BKT:n kasvun ja konvergenssin kehittymistä eri aluetasoilla ja eri vuosikymmeninä käyttäen alan yleisimpiä tutkimusmenetelmiä. Tutkimuksen tarkoituksena on osoittaa, että alueellista konvergenssia on tapahtunut Suomessa, ja että sen nopeus vaihtelee sekä ajassa että eri aluetasoilla. Toisessa tutkimuksessa tarkastellaan kuinka konvergenssinopeuden vaihtelut liittyvät yleisiin taloudellisiin suhdanteisiin, ja havaitaan, että alueellista konvergenssia tapahtuu lähinnä korkeasuhdanteen aikana, kun taas alue-erot pyrkivät kasvamaan laskusuhdanteessa.

Muuttoliikkeen on todettu olevan yksi keskeinen tekijä aluerakenteen muutoksessa, ja sen syitä tarkastellaan viidennessä kappaleessa. Havaitaan, että etenkin alueellinen tulojen kasvu vaikuttaa nettomuuttoon positiivisesti, samoin kuin alueen koulutustaso. Korkean työttömyyden alueet kärsivät muuttotappiosta, ja tämä edelleen hankaloittaa niiden kasvumahdollisuuksia. Taloudellisen kasvun ja muuttoliikkeen yhteyttä on tarkasteltu kappaleessa kuusi, joka tutkii muuttoliikkeen lyhyen ja pitkän aikaväin kasvuaikutuksia. Havaitaan, että lyhyellä välillä muuttoliike tasapainottaa alue-eroja, mutta pitkällä välillä se kasvattaa niitä. Tämä tukee kumulatiivisen kausaation mukaisesti tapahtuvaa aluekehitystä.

Viimeisessä kappaleessa tutkitaan muuttamisen vaikutusta tuloihin yksilötasolla ja pohditaan kuinka kohdealueen valinta vaikuttaa muuton jälkeisten tulojen kehitykseen. Ilmenee, että Suomen alueiden välillä on selkeitä eroja siinä, kuinka paljon muuttajat hyötyvät muutostaan. Nämä erot ja se, että alueet saavat hyvin eri tyyppisiä muuttajia vaikuttavat sekä alueen väestö- että tulo- rakenteen kehitykseen. Muuttoliikkeellä on siis selkeä vaikutus tuloihin sekä alue- että yksilötasolla.