

Izquierdo Llanes, Gregorio

**Working Paper**

## Harmonization and tax competition: Efficiency versus fairness

Diskussionsbeiträge, No. 1999,2

**Provided in Cooperation with:**

Bundeswehr University Munich, Economic Research Group

*Suggested Citation:* Izquierdo Llanes, Gregorio (1999) : Harmonization and tax competition: Efficiency versus fairness, Diskussionsbeiträge, No. 1999,2, Universität der Bundeswehr München, Fachgruppe für Volkswirtschaftslehre, Neubiberg

This Version is available at:

<https://hdl.handle.net/10419/32822>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

**Universität der Bundeswehr München**  
Institut für Volkswirtschaftslehre



Gregorio Izquierdo Llanes

## **Harmonization and Tax Competition**

- Efficiency versus Fairness -

**Die Steuerlehre**

# **HARMONIZATION AND TAX COMPETITION**

**- EFFICIENCY VERSUS FAIRNESS -**

**Gregorio Izquierdo Llanes<sup>#</sup>**

Instituto de Estudios Económicos, Madrid, Spain

University of San Pablo, Madrid, Spain

---

# I would like to thank Professor Eugenio Domingo (Professor at the Universidad Autónoma de Madrid and Director of the European Central Bank) and Professor Juan Iranzo (Professor of the UNED and General Manager of IEE) for the suggestions they made after reading the first draft of this work.

Ph.D. in Economics (Universidad Autónoma de Madrid); Head of Research Department,  
Instituto de Estudios Económicos, C/Castelló 128, 6<sup>a</sup>, 28006 Madrid, Spain, Telephone No.: ++34-91-56 17 500,  
e-mail: gizquierdo@ieemadrid.com;  
Profesor Adjunto (Tenure Professor Applied Economy), University of San Pablo, Madrid, Spain.



# Inhaltsverzeichnis

|          |  |           |
|----------|--|-----------|
| <b>1</b> | <b>INTRODUCTION .....</b>  | <b>2</b>  |
| <b>2</b> | <b>HARMONIZATION OF CORPORATE TAXES AND ECONOMIC EFFICIENCY .....</b>  | <b>3</b>  |
| 2.1      | HARMONIZATION AND EFFICIENCY IN INVESTMENT LOCATION: DIFFERENCES IN THE<br>COST OF INTERNATIONAL CAPITAL.....              | 3         |
| 2.2      | HARMONIZATION AND COMPETITION OF COMPANIES FROM THE VARIOUS COUNTRIES:<br>DIFFERENCES IN THE COST OF INTERNAL CAPITAL..... | 5         |
| 2.3      | FISCAL HARMONIZATION COSTS IN TERMS OF ECONOMIC EFFICIENCY .....   | 7         |
| <b>3</b> | <b>FISCAL COMPETITION IMPLICATIONS FOR FAIRNESS.....</b>   | <b>9</b>  |
| <b>4</b> | <b>CONCLUSION.....</b>   | <b>12</b> |



## **Abstract**

The present paper studies among other issues the effects on equity and efficiency of two classic principles of international capital taxation: the principle of residence and the principle of source. In addition, it discusses harmonization and tax competition policies in corporate taxation, aiming at establishing which should be the future of taxation of capital in Europe. Finally, the paper analyses and justifies the new approaches of "levelling the playing field" in capital taxation that are currently supported by the European Commission.

### Key words

European Integration, International Public Finance, Harmonization and Tax Competition, Taxation and International Capital Flows

Der vorliegende Aufsatz untersucht unter anderem die Effekte zweier klassischer Prinzipien der internationalen Kapitalbesteuerung auf die Gerechtigkeit und die Effizienz: das Bestimmungsland- und das Ursprungslandprinzip. Weiterhin werden die Harmonisierungs- und die Steuerwettbewerbspolitik in der Unternehmensbesteuerung diskutiert, um die wünschenswerte Zukunft in der Besteuerung von Kapitals in Europa darzustellen. Abschließend werden in dem Beitrag die neuen Ansätze in der Kapitalbesteuerung, die gegenwärtig durch die Europäische Kommission unterstützt werden, analysiert und begründet.

### Schlagworte

Europäische Integration, Internationale Finanzwissenschaft, Harmonisierungs- und Steuerwettbewerb, Besteuerung und internationale Kapitalbewegungen

### JEL-Klassifikation

F15, F21, H25, H87

## 1 INTRODUCTION

Harmonization of capital taxation is a process that can be seen from two opposing views. On one side are those that fervently defend the process, fearful that capital taxation revenues will otherwise suffer because of increasing possibilities for evasion. On the other side are those who reject harmonization and block any advances in this area, wary of loss of sovereignty in this field to the detriment of national interests. Such countries make it impossible to reach the unanimity that the European Union (EU) requires in order to approve any tax regulation measures. This lack of agreement has caused the harmonization of capital taxation to shift from ambitious objectives toward a more pragmatic view, focussed merely on coordinating those essential points that distort the smooth running of the EU, i.e., levelling the playing field.

The 1992 Ruding Report and its favorable reception from the Commission is proof of this "levelling the essentials" view. The conclusions were most circumspect when compared to previous harmonization projects, such as the grandiose proposals in the 1975 Directive on the harmonization of corporate tax and dividend withholding systems. The Report stated that complete harmonization of corporate taxes is not justified at the present time, and that EU actions should instead concentrate on overcoming fiscal distortions affecting international investment, fixing minimum criteria for calculating the tax base, establishing a band of general tax rates of between 30 % and 40 % and placing strict constraints on tax incentives. But in spite of all this, the Commission abandoned the Ruding Report. Indeed, in the communiqué that it sent to the Council and Parliament, it warned against the excessive harmonization of the tax base advocated in the Report and stated that it would not be advisable to establish a minimum rate of 30 percent, as this would make the Community vulnerable to third-country competition. Thus, it seems that for the moment no substantial harmonization of capital taxation is likely. However, since the question of corporate tax harmonization is nowhere near being settled (1996 Monti Report), it is still necessary to analyze the economic effects of harmonization and tax liability with special emphasis on the implications for efficiency and fairness.



## 2 HARMONIZATION OF CORPORATE TAXES AND ECONOMIC EFFICIENCY

### 2.1 Harmonization and Efficiency in Investment Location: Differences in the Cost of International Capital

Allocation efficiency is a difficult term to define, although the conviction that the major factor of efficiency is neutrality is gaining momentum. In the international sphere the main distortion of neutrality is capital migration due to fiscal differences. It is therefore important to delve into the effects of taxes on international capital allocation. But first it is necessary to define the major principles of fiscal neutrality in the international location of capital, the Capital Export Neutrality (CEN) and the Capital Import Neutrality (CIN).

The principle of CEN reflects a situation in which taxpayers are not influenced by fiscal systems when deciding whether to invest abroad or in their own country (Musgrave, 1987). This principle is observed when capital earnings are only taxed in the investor's country of residence and when there is no fiscal discrimination between the earnings obtained out of or within the country, e.g. when the full imputation system is used as a corrective mechanism for double taxation (Sato and Bird, 1975), which, *ceteris paribus*, causes capital to flow between countries until pre-tax earning rates are comparable and, since these rates tend to reflect the marginal productivity of capital, brings about efficient placement of international investment (OECD, 1991).

The CIN principle prevails when foreign and national investors (those financing investments) obtain the same rate of return in a given country after tax on their capital (Gardner, 1992), ensuring that a company is not competitively disadvantaged by operating in a certain market as the result of fiscal differences with its country of residence (Daly, 1994). This principle is observed when out-of-country earnings are tax-exempt, which is the same as application of the taxation principle known as the source principle and using the exemption method as a corrective mechanism to international double taxation (Sato and Bird 1975). CIN attempts to ensure that the investment agent is the one that produces goods and services most efficiently (Deveraux and Pearson, 1989; CEPS, 1992) and ensures an efficient allocation of savings between the various countries (OECD 1991).

Neutrality criteria in international location of capital acquire relevance within the process of European integration in their ability to level the playing field, or, in other words, to define an economic context in which taxes do not discriminate against some countries in terms of attracting capital and companies. For this to occur, companies that sell in one country have to carry the same tax burden, regardless of whether their products are manufactured in that country or imported from another, and regardless of

who the owners are, requiring simultaneous attainment of CEN and CIN. As this is almost impossible to achieve, with few exceptions, there is no alternative but to consider the different focuses entailed in the two types of neutrality.

Normally, the choice between CEN and CIN is determined by elasticity considerations (Giovanni, 1989; OECD 1991). Distortions are determined as a function of savings elasticity relative to interest rates and investment elasticity relative to capital costs. When the first one prevails over the other one, the principle of residence or of the source is preferable, respectively. The problem is that both elasticities vary as time goes by and differ for different countries and types of investment, so it is difficult to conclude unequivocally which of the two neutrality objectives in capital location is most desirable. Thus, given that available empirical information for both types of elasticity seems to show that savings elasticity is less than investment elasticity, relative to interest rates, it is possible that, according to this approach, the CEN objective is less distorting than the CIN (Tanzi, 1995).

An alternative approach is to consider location specific rents (Deveraux and Pearson, 1989). This approach is based on the fact that more efficient companies and locations can obtain extra earnings, which are added to the normal economic revenues earned by the rest of the companies competing in that market. Thus, many countries collect part of their corporate tax revenues as a result of a "location specific rent", generated precisely because companies are operating or producing from a certain country. These rents are normally of two types: a levy on production, when it is cheaper to produce goods and services in one country or region, and a levy on residence, when a company is more efficient regardless of where it operates. According to this approach, it seems more efficient to obtain CEN rather than CIN (Deveraux and Pearson, 1989), since the efficiency advantages of investment in a specific location seem to be greater than the differences of efficiency between companies.

The third approach is to consider tax transfers. If capital taxation is transferred to the source of earnings, then neutrality can only be attained with CIN (Kopits, 1992), since it allows each country to establish its tax in accordance with its specific levels of tax transfer of capital taxation, different for each country. The same results can be achieved if we consider that capital taxation adheres to the profit principle, by which capital is located according to the trade-off between the capital itself and public spending which increases capital productivity.

Another approach is the modern view of capital taxation (Zodrow, 1991). It recalls that CEN is based on the assumption that the decision to repatriate dividends from one country to another is independent of the fiscal treatment of this repatriation, since the relevant concept is the guarantee that there is no difference between investing abroad and repatriating dividends, or investing within the country.

However, if tax issues affect repatriation decisions (Hartman, 1985; Auerbach and Hassett, 1993; Altshuler, Newlon and Randolph, 1995) and the repatriation of dividends were excessively taxed, companies could opt for reinvesting earnings abroad as a mechanism to finance foreign investment. In that case, CEN would not be as important as CIN, i.e., all companies operating in a certain country would be affected by the same effective tax rate, whether they were national or foreign owned.

Thus, according to the elasticities and location specific rents approach, CEN seems more desirable than CIN. Nonetheless, elasticities can vary over time and convergence of economies makes production revenues less important, so that this preference could change in the future. However, according to the transfer tax approach, the profit principle and the modern view of taxation, CIN is preferable to CEN. Because of this, in our judgement, after weighting the various approaches, it seems more desirable to obtain CIN than CEN. In other words, we could conclude that the principle of source is preferable to the principle of residence.

This conclusion has been corroborated with results of simulation studies contained in the Ruding Report, which quantify the effects of tax harmonization on international capital costs. Harmonization of a correction for international double taxation based on the full imputation system does not reduce existing discrimination between national and foreign investment. If the correction for international double taxation is harmonized by using the exemption system, distortion is corrected by about 29 % (Izquierdo, 1997). It is worth noting that these conclusions differ markedly from those obtained in the Ruding Report, although in both cases the same tables of results are interpreted. In this sense, there is a certain inconsistency in the last paragraph of page 77 of the Report, when it affirms, without specifying which of the two systems it is referring to, that "adoption of a common imputation system improves CIN and CEN in the Community more than establishment of a common exemption system". All well and good, but the table on page 91 of the same report indicates that under the imputation system the cost of international capital within the Community is 7.1 %, the same as without any harmonization, and 6.7 % when a common exemption system is adopted, reducing the gap by 0.4 points.

## 2.2 Harmonization and competition of companies from the various countries: Differences in the cost of internal capital

Differences in the fiscal component of the cost of capital can alter conditions of competition of companies located in different countries. Taxation of capital returns produces a gap between

profitability of investment before taxes and of savings after taxes, which has been developed in numerous studies (King and Fullerton, 1984; OECD 1991 and 1994; Ruding 1992; Jorgenson, 1993; Rodriguez Ondarza, 1996). Here, however, we shall follow the methodology and assumptions used by the OECD model in its report "Taxing Profits in a Global Economy", which were also used by the Ruding Report. As they are generally well-known, we will not enter into any great detail (Izquierdo, 1997), although below, we will review the calculation assumptions.

Capital costs have been calculated using the tax systems existing in Europe on 31 December 1995, except for Spain, where the system used is the one valid as of 1 January 1996. Let us assume that inflation is at 3.1 %; the real interest rate is at 5 %, and that there are no personal taxes on capital. Methodology used for analyzing the cost of capital, without taking into account personal taxes or taxes on international dividend flows is equivalent to accepting the modern view of taxation already analyzed (Jorgenson and Landau, 1993). Capital cost is calculated for the various types of investment and financing, and the OECD weightings are used. On the investment side, this means 50 % for machinery; 28 % for real estate and 22 % for inventories. On the finance side, it means 55 % for undistributed earnings, 10 % for capital issues and 35 % for debt.

Having reviewed the methodology employed in presenting our results, we can now study the cost of capital in the EU today, using the assumptions mentioned. This cost appears in the first column of all the charts. According to our calculations, the country with the highest capital cost is Germany (6.35 %), and the one with lowest costs is Italy (5.13 %). In view of the low level of dispersion indicators (standard deviation indicators of 0.36, and Pearson measure of skewness of 0.06), at present there are no great differences in capital costs within the various European countries. We will next analyze variations in capital costs resulting from adoption of various harmonization measures: equalization of tax rates, of double taxation correction mechanisms, of depreciation methods and of inventory valuation systems.

Harmonization of tax rates modifies capital costs in a way that varies as a function of the level at which the rates are harmonized (see chart 1). If we harmonize toward higher rates, e.g. at 40 %, the average capital cost in the EU is 5.88 % with a Pearson skewness measure of 0.07, i.e., a greater dispersion than without harmonization at 0.06. Nonetheless, as harmonized rates are reduced, so too are capital costs and the dispersion. Thus, for example, if rates are reduced to 20 %, the average cost of capital in the EU is 5.20 % with a Pearson skewness measure of 0.04.

Three simulations have been conducted in harmonization of double taxation correction systems (see chart 2). Two cover equalization of the full imputation system with a correction of 30 % and of 20 %.

The other analyzes the system that does not correct for double taxation, in other words, a traditional system of corporate taxes. According to our calculations, neither the comparison of the correction for double taxation nor the equalization of a traditional system reduce dispersion, as the simulations had a Pearson skew measure of 0.06, the same as without harmonization.

In similar fashion, mechanisms for calculating depreciation and inventory evaluations can be harmonized (see chart 3). Three scenarios have been calculated in the first simulation: high depreciation (decreasing charge amortization at a rate of 30 % for machinery and straight-line depreciation at a rate of 6 % for buildings) and low depreciation (straight-line depreciation at a rate of 12.5 % for machinery and at a rate of 3 % for buildings). Liberal harmonization reduces the Pearson skewness measure by only 0.01, bringing it down to 0.05 %. Low harmonization increases dispersion, since it brings the Pearson skewness measure up to 0.08. Thus, harmonization of the calculation systems for tax depreciation hardly reduces dispersion, and in certain cases even increases it. In the simulation of inventory valuation harmonization, two possibilities have been considered for inventory valuation: the LIFO system, which corrects for inflation, and the FIFO system, which does not take into account price increases. Harmonization with both systems barely reduces dispersion less than a hundredth.

In summary, differences in the fiscal component of capital costs are only a small part in view of dispersion indicators used, and would hardly be sufficient reason for complete harmonization. In any case, if it would be decided to make the fiscal component of internal capital costs more equal, the effort should focus on harmonizing rates, since that is the only measure which significantly reduces dispersion.

### 2.3 Fiscal harmonization costs in terms of economic efficiency

The fact that the single currency will entail loss of autonomy over monetary policy obliges us to look to the other policies as long-term stabilization instruments and structural adjustment tools. Among these, capital taxation stands out as an instrument to counter cyclical trends. By limiting economies' ability to react to external shocks, this kind of harmonization can constrain the welfare function (Sinn, 1993). Also, it is very difficult for a harmonized fiscal system to be flexible and rapidly adapt to the kind of changing circumstances that non-Community countries can cause.

Fiscal competition can help to design an optimum capital taxation when there are problems of time inconsistency, i.e., when governments are not able to follow an optimum fiscal policy in the future (Giovanni, 1987; Rogoff, 1985). In the absence of any commitment to the contrary, countries tend to

overtax capital, because the capital pile taxed is the outcome of past savings, and thus totally inelastic (Kehoe, 1989), although agents' decision to invest in- or out-of-country can be made after announcement of the level of after-tax earnings.

Thirdly, some countries are reluctant to introduce fiscal harmonization because they want to maintain fiscal structures as manifestation of their economic or social philosophy (CEPS, 1992), especially when the savings and public expenditure requirements differ enormously between different countries. Also, tax harmonization *per se* does not guarantee better allocation of resources within the Community, since it all depends on which tax-system features harmonization is directed at (Tanzi and Bovenberg, 1991). Thus, tax reform processes are as important as harmonization. The EU welfare function can improve if tax systems are optimum, even if they are not completely coordinated.

Fiscal harmonization can also be defended from the perspective of preventing fiscal competition from forcing capital taxation to lower levels. This opinion is based on the belief that governments are philanthropists that only wish to maximize voter utility. However, the theory of social choice (Frey, 1990) has demonstrated that governments mainly act in their own interest, taking advantage of political cycle imperfections to ensure their re-election. One of the few constraints on excessive public sector growth is the fact that a country cannot tax its mobile factors of production, e.g., capital, at a level higher than the rest of the world without risking capital flight, which would mean reduced levels of investment and welfare, and the consequent loss of votes. A large part of a positive or negative evaluation of the effects of harmonization and competition is a function of the starting hypothesis about the consequences for the public sector in the various EU countries. There is no advantage to harmonizing savings if differences persist in public expenditure that influence economic activity.

### 3 FISCAL COMPETITION IMPLICATIONS FOR FAIRNESS

Fiscal competition is a situation in which the various countries design their tax policies individually, so as to maximize their social welfare functions, and therefore there are no supranational rules to constrain their actions. When there is fiscal competition, a small open economy cannot tax capital at source independently (Razin and Sadka, 1994), as its earnings depend on what is going on in the rest of the world. If capital is internationally mobile, capital owners will transfer their taxation to owners of immobile factors of production whenever there is any attempt to tax capital at source (Diamond and Mirrlees, 1991). On the other hand, if taxation at source reduced capital earnings, there would be a flight of capital out of country, which would diminish the total capital pile in the economy, raising capital earnings to the level which would equal earnings rates worldwide. As the effect of capital taxes based on the source principle is equivalent, in the case of perfectly mobile capital, to an implicit tax on labor, it is more efficient to directly reduce earnings obtained by labor instead of doing it by means of an implicit tax on labor, which would distort not only decisions about leisure/labor trade-offs but also international investment decisions (Gordon, 1986).

In spite of everything, although taxes on capital returns based on the principle of source may tend to disappear in a fiscal competition situation, this is not necessarily true of taxes based on the principle of residence (Razin and Sadka, 1992). In this respect, the theory of optimum taxation suggests that whenever there is no tax evasion on earnings obtained out-of-country, taxes based on the residence principle can be an efficient fiscal structure for a small open economy (Bovenberg, 1994). Nevertheless, reality demonstrates that taxpayers find it easier to evade taxes on out-of-country earnings than those obtained in their own country. When this happens and it is not possible to enforce taxes on out-of-country returns, countries are obliged to apply the source principle instead of the residence principle, even though the level of tax revenues is lower (Gordon, 1990).

The main argument used by supporters of tax harmonization is that the alternative to tax competition necessarily leads to reduction or even disappearance of capital taxation. This belief is based on fear of widespread use of foreign investment as an evasion mechanism (Schjelderup, 1993; Frenkel, Razin and Sadka, 1991). Further, as small countries find themselves with increasing difficulty in taxing capital (Kanbur and Keen, 1993), there could come a time when they would switch sides and become tax havens (Bond and Samuelson, 1989), which adds to the risk of lower revenues from capital taxation. Nonetheless, while it is true that tax competition in the various countries limits their ability to collect more revenues than in a harmonized situation, this does not automatically lead to the

disappearance of tax revenues, as can be seen in nowadays Europe, where although there is no harmonization, capital taxation is still alive and well (and kicking).

The main reason such taxation has survived in open economies lies in tax transfers. Despite lack of information on the degree of capital taxation transfers, theoretical models suggest that in open economies with free movement of factors, tax is transferred to less mobile factors of production, e.g., labor or real estate. This has two important implications: If the tax burden is transferred until the profitability of national investment is equal to the rest of the world, the diversity of rates, rather than distorting resource allocation, could cause a different degree of transfer. Also, as the tax is formally levied not on capital but on owners of other less mobile production factors, a tax that appears to fall on capital could be maintained, but only because in practice it would actually fall on the rest of the factors of production.

Another explanation for the survival of capital taxation in open economies can be found in the profit principle, by which taxes are related to the level of public expenditure which benefits capital. Taxation based on the profit principle stimulates efficiency in allocating public sector resources, among other reasons, because it provides consumers with an indicator to the relative costs of public services in the various jurisdictions, and this limits overexpansion of the public sector and promotes efficiency (Zodrow, 1994). In similar fashion, taxes can be imposed which take advantage of location rents. In these cases, capital invested in obtaining profits could be taxed without generating excess taxes, understood as a lesser amount of capital entry flows or a greater level of outgoing flows.

Use of the imputation system as a correction mechanism for double taxation means the tax burden can be exported from the source country to the country of residence (Mintz, 1992), since the tax borne by the capital in the source country is used to reduce the owners' tax debt in their country of residence (Damus, Hobson and Thirsk, 1991). If a country importing capital reduces its tax, rather than causing investment flow, it could only cause a transfer of the tax base from importing countries to exporting countries (Gordon, 1990). This problem would mean that the absence of harmonization combined with the full imputation system could place the capital taxation level above the optimum level (CEPS, 1992).

Some hypotheses used by theoretical models which warn about the danger of capital flight are not altogether correct. Specifically, the one which affirms that there are investment possibilities in third countries that do not tax, and the one which holds that capital is perfectly mobile. With respect to the first, even though there are foreign investment possibilities not subject to taxation, it is also true that even tax havens have established some type of tax. Adding evasion costs, these levels would be the



---

floor to which taxation could be reduced in developed countries. One of the reasons justifying the present existence of capital taxation rests on capital still being relatively immobile (Mussa and Goldstein, 1993).

Finally, an important reason for making capital pay taxes is that it has greater mobility than the labor factor. It is thus inferred that tax on profit that treats both types of profit means higher tax on capital than on labor. Thus, globalization and integration of the world economy forces a change of comprehensive tax on profits toward taxes of bonds only. This type tax is less onerous for more mobile tax bases, e.g., financial capital returns, and maintains a greater tax levy on less mobile tax bases, such as return on labor. This process has already begun in some countries and will grow in future. Also, corporate taxes do not have to disappear, since the objective sometimes is not to obtain income but to dissuade the practice of fiscal trade-offs between labor profits for individuals and corporations or in-country and out-of-country investment. In this sense, one of the main functions of corporate tax is to reduce individuals' opportunities to transfer their labor profits to a corporate tax base (Gordon and Mackie Mason, 1995), because then labor profits would either not pay tax or would pay a lesser tax.

In all, the hypothetical disappearance of capital taxation does not have to be as negative *a priori* as is thought. First, because if it were to occur, capital taxation could become tax on immobile factors, such as labor or real estate (Hubbard, 1993), especially when this transfer improves the economic welfare from an efficiency point of view (Jones, Manuelli and Rossi, 1993; Zhu, 1992; Cahari, Christiano and Kehoe, 1994), which could alleviate any negative effects on fairness.

There is widespread belief that capital taxation damages economic activity by not stimulating investment. This explains the argument that if capital taxation is reduced, it could stimulate investment, create jobs, improve competitiveness, and automatically increase earnings of national factors. Additionally, if the tax is transferred to the labor factor, its suppression could lead to an increase in labor earnings or greater creation of jobs that would better redistribute earnings in the country (Domingo, 1983).

Lastly, empirical evidence indicates that one of the main determining factors of growth is capital taxation (King and Rebelo, 1990; Razin and Yuen, 1995). This leads to the conclusion that a less developed country can converge toward higher earnings levels if it uses capital taxation less intensely than those countries with which it wishes to converge. As a result, if countries with different levels of development are obliged to follow the same capital taxation plan, differences between them could be perpetuated (Bernaldo de Quirós, 1995).

## 4 CONCLUSION

In view of the work presented, it does not seem probable that capital taxation will be guided in Europe by harmonization, especially when some countries show such marked reluctance to accept it, and unanimity is required to vote it through. This hypothesis is not as negative as some would believe, especially since it helps to reduce distortions that capital taxation generates in economic activity. Nonetheless, several problems may appear in this scenario. It is possible that without harmonization, tax revenues will fall to such low levels that it affects the redistributive ability of public budgets. This is a real risk, but, as has been shown, not to the degree that some indicate, and, as a positive counterweight, competition introduces an additional discipline mechanism for the public sector. Nonetheless, if excessive fiscal competition surfaces, unacceptable for some EU countries, it seems reasonable to accept some measures that could fit within the so-called harmonization of essentials, or levelling of the playing field, but only if its approval and application in the European Union is guided by prudence when pondering the different objectives and, if possible, without ignoring the opinion of any member country. In this context, we should welcome the recent "code for good fiscal practices" approved by the European Council in Dublin, in order to avoid an excessive fiscal competition, instead of introducing a deeper compulsory tax harmonization that would have even more negative consequences as mentioned above.

It should suffice for now to undertake measures that help to establish a stable framework that can take advantage of the virtues of competition without triggering of its negative defects. The first such measure should be to extend the double taxation agreements in accordance with the principle of source in order to reach CIN, since reduced distortions resulting from such a change would improve the economic welfare of the European Union as a whole without excessively affecting the loss of sovereignty. The second measure would fix a rate band within which member-country tax rates would fit. This band would include values far below those considered by the Ruding Committee, because in this way dispersion indices would come down, the risk of capital flight to third countries would diminish, some of the distortion generated by taxation at the national level would be corrected, and the practice of fiscal planning consistent with transfer of tax bases of high-tax countries to low-tax countries would be reduced. Additionally, this band would have to incorporate some automatic adjustment mechanism to help EU member countries react against changes in third countries' regulations.

## Bibliography

- ALTSHULER, R./NEWLON, T. S./RANDOLPH, W. C. (1995): "DO REPATRIATION TAXES MATTER? EVIDENCE FROM THE TAX RETURNS OF U. S. MULTINATIONALS" IN "*THE EFFECTS OF TAXATION ON MULTINATIONAL CORPORATIONS*", Eds. FELDSTEIN, M./HINES, J.R./GLENN HUBBARD, R., THE UNIVERSITY OF CHICAGO PRESS - NATIONAL BUREAU OF ECONOMIC RESEARCH, PAGES 253-276.
- AUBERBACH, A. J./HASSETT, K. (1993): "TAXATION AND FOREIGN DIRECT INVESTMENT IN THE UNITED STATES: A RECONSIDERATION OF THE EVIDENCE", IN "STUDIES IN INTERNATIONAL TAXATION", Eds. GIOVANINI A./GLENN HUBBARD, R./SLEMROD, J., THE UNIVERSITY OF CHICAGO PRESS - NATIONAL BUREAU OF ECONOMIC RESEARCH, PAGES 119-144.
- BERNALDO DE QUIRÓS, L. (DEC. 1995): "LOS COSTES DE LA UNIÓN MONETARIA EUROPEA", LIBRO MARRÓN, CIRCULO DE EMPRESARIOS.
- BOND, E./SAMUELSON, L. (1989): "STRATEGIC BEHAVIOUR AND THE RULES FOR INTERNATIONAL TAXATION OF CAPITAL", IN: ECONOMIC JOURNAL , Nº 99, PAGES 1099-1111.
- BOVENBERG, A. L. (1994): "CAPITAL TAXATION IN THE WORLD ECONOMY", IN "THE HANDBOOK OF INTERNATIONAL MACROECONOMICS", Eds. VAN DER PLOEG, F., BLACKWELL, OXFORD.
- CENTRE FOR EUROPEAN POLICY STUDIES (FEB. 1992): "CORPORATE TAX HARMONISATION IN THE EUROPEAN COMMUNITY", CEPS WORKING PARTY REPORT Nº 4.
- COMMISSION OF THE EUROPEAN COMMUNITIES (1992): "REPORT OF THE COMMITTEE OF INDEPENDENT EXPERTS ON COMPANY TAXATION", BRUSSELS.
- COMMISSION OF THE EUROPEAN COMMUNITIES (1996): "THE TAXATION IN THE EUROPEAN UNION", BRUSSELS.
- CHARI, V. V./CHRISTIANO, L./KEHOE, P. J. (1994): "OPTIMAL TAXATION OF CAPITAL AND LABOR IN ASTOCHASTIC GROWTH MODEL", IN: JOURNAL OF POLITICAL ECONOMY, VOL 102, PAGES 617-652.

- DALY, M. (1994): "HARMONIZATION OF DIRECT TAXES IN THE EUROPEAN COMMUNITIES", IN "FISCAL PROBLEMS IN THE SINGLE-MARKET EUROPE", EDS. BALDASSARRI, M./ROBERTI, P., ST. MARTIN'S PRESS, NEW YORK.
- DAMUS, S./HOBSON, P. A. R./THIRSK, W. R. (1991): "FOREIGN TAX CREDITS, THE SUPPLY OF FOREIGN CAPITAL, AND TAX EXPORTING. A NUMERICAL GENERAL EQUILIBRIUM MODEL OF CORPORATE TAX REFORM IN CANADA", IN: JOURNAL OF PUBLIC ECONOMICS, N° 45.
- DEVERAUX, M./PEARSON, M. (1989): "CORPORATE TAX HARMONISATION AND ECONOMIC EFFICIENCY", REPORT SERIES, N° 35, THE INSTITUTE FOR FISCAL STUDIES, LONDON.
- DIAMOND, P./MIRRLISS, J. (1971): "OPTIMAL TAXATION AND PUBLIC PRODUCTION I AND II: TAX RULES", IN: AMERICAN ECONOMIC REVIEW, N° 61, JUNE, PAGES 261-278.
- DOMINGO SOLANS, E. (1983): "INCIDENCIA Y TRASLACIÓN DEL IMPUESTO SOBRE LAS NÓMINAS", REVISTA DE SEGURIDAD SOCIAL N° 18, APRIL-JUNE.
- FRENKEL, J./RAZIN, A./SADKA, E. (1991): "INTERNATIONAL TAXATION IN AN INTEGRATED WORLD", THE MIT PRESS, CAMBRIDGE, MASSACHUSETTS, PAGES 186-207.
- FREY, B. (1990): "INTERGOVERNMENTAL TAX COMPETITION", IN "INFLUENCE OF TAX DIFFERENTIALS AN INTERNATIONAL COMPETITIVENESS", EDS. McLURE, C./SINN, H.-W./ MUSGRAVE, R. AND P.B., KLUWER LAW AND TAXATION PUBLISHERS, DEVENTER.
- GARDNER, E. (1992): "TAXES ON CAPITAL INCOME" IN "TAX HARMONIZATION IN THE EUROPEAN COMMUNITY: POLICY ISSUES AND ANALYSIS", EDS. KOPITS, G., OCCASIONAL PAPER N° 94, JULY, INTERNATIONAL MONETARY FUND, WASHINGTON, D. C.
- GIOVANINNI, A. (1987): "INTERNATIONAL CAPITAL MOBILITY AND TAX EVASION", FIRST BOSTON WORKING PAPER N° 21, GRADUATE SCHOOL OF BUSINESS, COLUMBIA UNIVERSITY, NEW YORK.
- GIOVANINNI, A. (1989): "NATIONAL TAX SYSTEMS VERSUS THE EUROPEAN CAPITAL MARKET", IN: ECONOMIC POLICY N° 9, OCTOBER.
- GORDON, R. H. (1990): "CAN CAPITAL INCOME TAXES SURVIVE IN OPEN ECONOMIES?", NBER WORKING PAPER N° 3416, CAMBRIDGE, AUGUST.

- 
- GORDON, R. H. (1986): "TAXATION OF INVESTMENT AND SAVINGS IN A WORLD ECONOMY", IN: AMERICAN ECONOMIC REVIEW, VOL. 76, Nº 5, DECEMBER, PAGES 1086-1102.
- GORDON, R. H./MACKIE-MASON, J. K. (1995): "WHY IS THERE CORPORATE TAXATION IN A SMALL OPEN ECONOMY? THE ROLE OF TRANSFER PRICING AND INCOME SHIFTING", IN "THE EFFECTS OF TAXATION ON MULTINATIONAL CORPORATIONS", Eds. FELDSTEIN, M./ HINES, J. R./GLEN HUBBARD, R., THE UNIVERSITY OF CHICAGO PRESS - NATIONAL BUREAU OF ECONOMIC RESEARCH, PAGES 67-91.
- HARTMAN, D. (1995): "TAX POLICY AND FOREIGN DIRECT INVESTMENT", IN: JOURNAL OF PUBLIC ECONOMICS, Nº 26, PAGES 107-121.
- HUBBARD, R. G. (1993): "CORPORATE TAX INTEGRATION: A VIEW FROM THE TREASURY DEPARTMENT", IN: JOURNAL OF ECONOMIC PERSPECTIVES", Nº 7, WINTER ISSUE, PAGES 115-32.
- IZQUIERDO, G. (1997): "EL FUTURO DE LA TRIBUTACIÓN DEL CAPITAL EN EUROPA", COLECCIÓN ESTUDIOS, INSTITUTO DE ESTUDIOS ECONÓMICOS, PAGES 1-409.
- JONES, L./MANUELLI, R./ROSSI, P. (1993): "OPTIMAL TAXATION IN MODELS OF ENDOGENOUS GROWTH", IN: JOURNAL OF ECONOMIC THEORY, VOL. 101, NUMBER 3.
- JORGENSEN, D. W./LANDAU, R. (1993): "TAX REFORM AND THE COST OF CAPITAL", THE BROOKINGS INSTITUTION, WASHINGTON, D.C.
- KANBUR, R./KEEN, M. (1993): "JEUX SANS FRONTIÈRES: TAX COMPETITION AND TAX COORDINATION WHEN COUNTRIES DIFFER IN SIZE", IN: AMERICAN ECONOMIC REVIEW, Nº 83, SEPTEMBER, PAGES 877-892.
- KEHOE, P. (1989): "POLICY COOPERATION AMONG BENEVOLENT GOVERNMENTS MAY BE UNDERISABLE", IN: REVIEW OF ECONOMIC STUDIES, VOL. 56, PAGES 289-296.
- KING, M. A./FULLERTON, D. (1984): "THE TAXATION OF INCOME FROM CAPITAL", UNIVERSITY OF CHICAGO PRESS, CAMBRIDGE.

- KING, R./REBELO, S. (1990): "PUBLIC POLICY AND ECONOMIC GROWTH: DEVELOPING NEOCLASSICAL IMPLICATIONS", IN: JOURNAL OF POLITICAL ECONOMY, VOL. 98, N° 5, PAGES 126-150.
- KOPITS, G. (1992): "TAX HARMONIZATION IN THE EUROPEAN COMMUNITY: POLICY ISSUES AND ANALYSIS", OCCASIONAL PAPER N° 94, INTERNATIONAL MONETARY FUND, WASHINGTON D.C., JULY.
- MINTZ, J. M. (1992): "IS THERE A FUTURE FOR CAPITAL INCOME TAXATION?", WORKING PAPER N° 108, OECD, PARIS.
- MUSGRAVE, P. B. (1987): "INTERJURISDICTIONAL COORDINATION OF TAXES ON CAPITAL INCOME", IN "TAX COORDINATION IN THE EUROPEAN COMMUNITY", EDS. CNOSSEN, S., SERIES ON INTERNATIONAL TAXATION N° 7, KLUWER LAW AND TAXATION PUBLISHERS, DEVENTER.
- MUSSA, M./GOLDSTEIN, M. (1993): "THE INTEGRATION OF WORLD CAPITAL MARKETS", IN "CHANGING CAPITAL MARKETS: IMPLICATIONS FOR MONETARY POLICY", EDS. KANSAS CITY FEDERAL BANK, KANSAS, PAGES 245-314.
- OECD (1991): "TAXING PROFITS IN A GLOBAL ECONOMY", PARIS.
- OECD (1994): "TAXATION AND HOUSEHOLD SAVING", PARIS.
- RAZIN, A./YUEN, C. W. (1995): "CAPITAL INCOME TAXATION AND LONG RUN GROWTH: NEW PERSPECTIVES", NBER WORKING PAPER N° 5028, FEBRUARY, CAMBRIDGE.
- RAZIN, A./SADKA, E. (1994): "INTERNATIONAL FISCAL POLICY COORDINATION AND COMPETITION", IN "THE HANDBOOK OF INTERNATIONAL MACROECONOMICS", EDS. VAN DER PLOEG, F., BLACKWELL, OXFORD, U. K.
- RAZIN, A./SADKA, E. (1992): "INTEGRATION OF INTERNATIONAL CAPITAL MARKETS: THE SIZE OF GOVERNMENT AND TAX COMPETITION", IN "TAXATION IN THE GLOBAL ECONOMY", EDS. RAZIN, A./SLEMROD, J., THE UNIVERSITY OF CHICAGO PRESS, CHICAGO.
- RAZIN, A./SADKA, E. (1989): "INTERNATIONAL TAX COMPETITION AND GAINS FROM TAX HARMONIZATION", NBER WORKING PAPER, N° 3152, OCTOBER, CAMBRIDGE.

- 
- RODRIGUEZ ONDARZA, J. A. (1996): "FISCALIDAD DE LA INVERSIÓN SOCIETARIA: UN ESTUDIO COMPARADO PARA LA UNIÓN EUROPEA", HACIENDA PÚBLICA ESPAÑOLA Nº 136, PAGES 109-143.
- ROGOFF, K. (1985): "CAN INTERNATIONAL MONETARY COOPERATION BE COUNTERPRODUCTIVE", IN: JOURNAL OF INTERNATIONAL ECONOMICS, Nº 18, PAGES 199-217.
- SATO, M./BIRD, R. (1975): "INTERNATIONAL ASPECTS OF THE TAXATION OF CORPORATIONS AND SHAREHOLDERS", INTERNATIONAL MONETARY FUND , STAFF PAPERS Nº 22, , WASHINGTON, D. C., PAGES 384-455.
- SCHJELDERUP, G. (1993): "OPTIMAL TAXATION, CAPITAL MOBILITY AND TAX EVASION", IN: SCANDINAVIAN JOURNAL OF ECONOMICS, VOL. 95, Nº 3, PAGES 377-386.
- SINN S. (1993): "COMPETITION FOR CAPITAL: ON THE ROLE OF GOVERNMENT IN AN INTEGRATED WORLD ECONOMY", KIELER STUDIEN Nº 253, INSTITUT FÜR WELTWIRTSCHAFT AN DER UNIVERSITÄT KIEL.
- TANZI, V. (1995): "TAXATION IN AN INTEGRATING WORLD", THE BROOKINGS INSTITUTION, WASHINGTON, D.C.
- TANZI, V./BOVENBERG, L. (1990), "IS THERE A NEED FOR HARMONIZING CAPITAL INCOME TAXES WITHIN EC COUNTRIES", IN: "REFORMING CAPITAL INCOME TAXATION", EDS. SIEBERT, H., INSTITUT FÜR WELTWIRTSCHAFT AN DER UNIVERSITÄT KIEL, TÜBINGEN.
- ZHU, X. (1992): "OPTIMAL FISCAL POLICY IN A STOCHASTIC GROWTH MODEL", IN: JOURNAL OF ECONOMIC THEORY, VOL. 58, Nº 1, PAGES 250-289.
- ZODROW, G. R. (1991): "ON THE TRADITIONAL AND NEW VIEWS OF DIVIDEND TAXATION", IN: NATIONAL TAX JOURNAL, VOL. 45, DECEMBER, PAGES 497-510.
- ZODROW, G. R. (1994): "ATRIBUCIÓN DE IMPUESTOS Y TRANSFERENCIAS INTERGUBERNAMENTALES", HACIENDA PÚBLICA ESPAÑOLA Nº 130.

## Appendix

**CHART 1**

**THE COST OF CAPITAL WITH HARMONIZED TAX RATES**

|             | No<br>Harmon. | Harmonized rates at |      |      |      |      |      |      |            |
|-------------|---------------|---------------------|------|------|------|------|------|------|------------|
|             |               | 40 %                | 35 % | 30 % | 25 % | 20 % | 15 % | 10 % |            |
| U.K.        | 5,80          | 6,20                | 5,91 | 5,66 | 5,45 | 5,28 | 5,13 | 5,00 | U.K.       |
| Holland     | 5,58          | 6,24                | 5,98 | 5,76 | 5,58 | 5,42 | 5,29 | 5,18 | Holland    |
| Germany     | 6,35          | 5,91                | 5,66 | 5,45 | 5,28 | 5,14 | 5,02 | 4,92 | Germany    |
| Austria     | 6,16          | 6,52                | 6,21 | 5,95 | 5,73 | 5,54 | 5,38 | 5,23 | Austria    |
| Belgium     | 5,45          | 5,48                | 5,35 | 5,25 | 5,17 | 5,11 | 5,07 | 5,03 | Belgium    |
| Denmark     | 5,93          | 6,24                | 5,97 | 5,75 | 5,57 | 5,41 | 5,28 | 5,17 | Denmark    |
| Spain       | 5,62          | 5,85                | 5,62 | 5,43 | 5,27 | 5,13 | 5,02 | 4,93 | Spain      |
| Finland     | 5,20          | 5,78                | 5,54 | 5,35 | 5,20 | 5,07 | 4,96 | 4,87 | Finland    |
| France      | 5,53          | 5,86                | 5,61 | 5,41 | 5,24 | 5,10 | 4,99 | 4,89 | France     |
| Greece      | 6,05          | 6,02                | 5,79 | 5,61 | 5,46 | 5,33 | 5,23 | 5,14 | Greece     |
| Ireland     | 5,72          | 5,62                | 5,43 | 5,27 | 5,14 | 5,04 | 4,96 | 4,89 | Ireland    |
| Italy       | 5,13          | 5,22                | 5,09 | 4,98 | 4,90 | 4,84 | 4,79 | 4,76 | Italy      |
| Luxembourg  | 5,22          | 5,37                | 5,26 | 5,18 | 5,11 | 5,07 | 5,03 | 5,01 | Luxembourg |
| Portugal    | 5,36          | 5,52                | 5,36 | 5,22 | 5,12 | 5,03 | 4,96 | 4,91 | Portugal   |
| Sweden      | 5,74          | 6,42                | 6,12 | 5,87 | 5,66 | 5,48 | 5,33 | 5,20 | Sweden     |
| AVERAGE UE  | 5,66          | 5,88                | 5,66 | 5,48 | 5,32 | 5,20 | 5,10 | 5,01 | AVERAGE UE |
| S.D.        | 0,36          | 0,39                | 0,33 | 0,28 | 0,24 | 0,20 | 0,17 | 0,15 | S.D.       |
| S.M.Pearson | 0,06          | 0,07                | 0,06 | 0,05 | 0,04 | 0,04 | 0,03 | 0,03 | SM.Pearson |

**Source: Author's calculations**



## CHART 2

**THE COST OF CAPITAL WITH HARMONIZATION OF DOUBLE TAXATION  
CORRECTIVE MECHANISMS**

|                   | No Harmon.  | Imput. of<br>30 % | Imput. of<br>20 % | Clasic      |                   |
|-------------------|-------------|-------------------|-------------------|-------------|-------------------|
| U.K.              | 5,80        | 5,75              | 5,86              | 6,07        | U.K.              |
| Holland           | 5,58        | 5,28              | 5,38              | 5,58        | Holland           |
| Germany           | 6,35        | 6,35              | 6,45              | 6,66        | Germany           |
| Austria           | 6,16        | 5,82              | 5,93              | 6,16        | Austria           |
| Belgium           | 5,45        | 5,13              | 5,24              | 5,45        | Belgium           |
| Denmark           | 5,93        | 5,62              | 5,72              | 5,93        | Denmark           |
| Spain             | 5,62        | 5,61              | 5,71              | 5,93        | Spain             |
| Finland           | 5,20        | 5,22              | 5,32              | 5,51        | Finland           |
| France            | 5,53        | 5,57              | 5,67              | 5,88        | France            |
| Greece            | 6,05        | 5,71              | 5,82              | 6,05        | Greece            |
| Ireland           | 5,72        | 5,67              | 5,77              | 5,99        | Ireland           |
| Italy             | 5,13        | 5,19              | 5,29              | 5,50        | Italy             |
| Luxembourg        | 5,22        | 4,93              | 5,03              | 5,22        | Luxembourg        |
| Portugal          | 5,36        | 5,28              | 5,38              | 5,60        | Portugal          |
| Sweden            | 5,74        | 5,45              | 5,55              | 5,74        | Sweden            |
| <b>AVERAGE UE</b> | <b>5,66</b> | <b>5,50</b>       | <b>5,61</b>       | <b>5,82</b> | <b>AVERAGE UE</b> |
| S.D.              | 0,36        | 0,35              | 0,35              | 0,36        | S.D.              |
| S.M.Pearson       | 0,06        | 0,06              | 0,06              | 0,06        | S.M.Pearson       |

**Source: Author's calculations**

### CHART 3

#### THE COST OF CAPITAL WITH HARMONIZATION OF MECHANISMS FOR CALCULATING DEPRECIATION AND INVENTORY EVALUATION

|                   | Depreciation |             |             | Inventory Evaluation |             |             |                   |
|-------------------|--------------|-------------|-------------|----------------------|-------------|-------------|-------------------|
|                   | No Harmon.   | High        | Low         | No Harmon            | LIFO        | FIFO        |                   |
| U.K.              | 5,80         | 5,56        | 5,38        | 5,80                 | 5,49        | 5,80        | U.K.              |
| Holland           | 5,58         | 5,30        | 4,85        | 5,58                 | 5,58        | 5,79        | Holland           |
| Germany           | 6,35         | 6,24        | 5,84        | 6,35                 | 5,78        | 5,91        | Germany           |
| Austria           | 6,16         | 5,53        | 4,79        | 6,16                 | 6,16        | 6,49        | Austria           |
| Belgium           | 5,45         | 5,69        | 4,75        | 5,45                 | 5,45        | 5,86        | Belgium           |
| Denmark           | 5,93         | 5,86        | 5,49        | 5,93                 | 5,60        | 5,93        | Denmark           |
| Spain             | 5,62         | 5,26        | 4,63        | 5,62                 | 5,45        | 5,97        | Spain             |
| Finland           | 5,20         | 5,21        | 5,17        | 5,20                 | 4,98        | 5,20        | Finland           |
| France            | 5,53         | 5,48        | 5,34        | 5,53                 | 5,22        | 5,53        | France            |
| Greece            | 6,05         | 5,76        | 4,76        | 6,05                 | 6,05        | 6,48        | Greece            |
| Ireland           | 5,72         | 5,97        | 5,62        | 5,72                 | 5,29        | 5,72        | Ireland           |
| Italy             | 5,13         | 5,23        | 4,58        | 5,13                 | 5,13        | 5,49        | Italy             |
| Luxembourg        | 5,22         | 5,50        | 4,79        | 5,22                 | 5,22        | 5,54        | Luxembourg        |
| Portugal          | 5,36         | 5,33        | 4,64        | 5,36                 | 5,36        | 5,72        | Portugal          |
| Sweden            | 5,74         | 5,57        | 5,37        | 5,74                 | 5,50        | 5,74        | Sweden            |
| <b>AVERAGE UE</b> | <b>5,66</b>  | <b>5,57</b> | <b>5,07</b> | <b>5,66</b>          | <b>5,48</b> | <b>5,81</b> | <b>AVERAGE UE</b> |
| S.D.              | 0,36         | 0,30        | 0,41        | 0,36                 | 0,32        | 0,34        | S.D.              |
| S.M.Pearson       | 0,06         | 0,05        | 0,08        | 0,06                 | 0,06        | 0,06        | S.M.Pearson       |

Source: Author's calculations