Capital Input in OECD Agriculture: A Multilateral Comparison

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Abstract: This paper provides a farm sector comparison of levels of capital input for fourteen OECD countries for the period 1973-2002. The starting point for construction of a measure of capital input is the measurement of capital stock. Estimates of depreciable capital are derived by representing capital stock at each point of time as a weighted sum of past investments. The weights correspond to the relative efficiencies of capital goods of different ages, so that the weighted components of capital stock have the same efficiency. Estimates of the stock of land are derived from balance sheet data. We convert estimates of capital stock into estimates of capital service flows by means of capital rental prices. Comparisons of levels of capital input among countries require data on relative prices of capital input. We obtain relative price levels for capital input via relative investment goods prices, taking into account the flow of capital input per unit of capital stock in each country.

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1. Introduction

This paper provides a comparison of levels of capital input in agriculture for fourteen OECD countries for the period 1973-2002.[1] Measures of capital input are necessary for a description of technology in agriculture. In a subsequent paper, we integrate these estimates into production accounts for agriculture, including real output and real factor input. We apply the resulting measures of real product and real factor input to the study of total factor productivity and international competitiveness.

The starting point for construction of a measure of capital input is the measurement of capital stock. Estimates of depreciable capital are derived by representing capital stock at each point of time as a weighted sum of past investments.[2] The weights correspond to the relative efficiencies of capital goods of different ages, so that the weighted components of capital stock have the same efficiency. To estimate the stock of land in each country, we construct time series price indexes of land in farms. The stock of land is then constructed implicitly as the ratio of the value of land in farms to the time series price index.

The next step in developing measures of capital input is to construct estimates of prices of capital services. For each asset the price of investment goods is a weighted sum of future service or rental prices, discounted by a factor that incorporates future rates of return. The weights are given by the relative efficiencies of capital goods of different ages. Our estimates of

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[1] The countries are Belgium, Denmark, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Sweden, the United Kingdom and the United States.

[2] In this study, depreciation is defined as the decline in the ability of the asset to produce at a given output level, *i.e.*, the physical decay of the asset or a decline in its productivity. Efficiency loss is assumed to be a function of age of the asset.

capital input incorporate the same data on relative efficiencies of capital goods into estimates of both capital stock and capital rental prices, so that the requirement for internal consistency of measures of capital input is met.

Finally, a comparison of levels of capital input among countries requires data on the relative prices of capital input among all countries included in the comparison. We develop data on relative prices of capital input for all fourteen countries. We obtain relative price levels of capital input among countries via relative investment goods prices, taking into account the flow of capital input per unit of capital stock in each country. Relative prices of land are based on hedonic regression results.

The paper is organized as follows. Section 2 describes the mathematical model and the underlying assumptions used to estimate capital input. Section 3 presents estimates of relative levels of capital input for the fourteen countries. Section 4 concludes.

2. Methodology

We compile estimates of capital input and capital service prices for each of fourteen countries. Construction of these series begins with estimating the capital stock and the service price for each asset type in each country. For depreciable assets, the perpetual inventory method is used to derive capital stocks from data on investment in constant prices.[3] For land, capital stocks are

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[3] Data on investment for most member countries of the European Union are from *Capital Stock Data for the European Union* (Beutel, 1997). The series were extended through 2002 using Eurostat's NewCronos database (http://europa.eu.int/comm/eurostat/newcronos/). Additional data sources include *Contabilidad Nacional de España* (Instituto Nacional de Estadística), *Anuario de Estadística Agraria* (Ministerio de Agricultura Pesca y Alimentación), and *Cuentas de Sector Agrario* (Ministerio de Agricultura Pesca y Alimentación); ISTAT, Dipartimento di Contabilità Nazionale ed Analisi Economica; and Instituto Nacional de Estadística, Departamento de Estatísticas da Agricultura e Pescas, Serviço de Estatísticas Económicas Agrícolas. Investment data for the United States are from *Fixed Reproducible Tangible Wealth*

measured as implicit quantities derived from balance sheet data. Implicit rental prices for each asset are based on the correspondence between the purchase price of the asset and the discounted value of future service flows derived from that asset.

2.1 Depreciable Assets

Under the perpetual inventory method, the capital stock at the end of each period, say K_t, is measured as the sum of past investments, each weighted by its relative efficiency, say d_τ:[4]

(1) $$K_t = \sum_{\tau=0}^{\infty} d_\tau I_{t-\tau} .$$

In equation (1), we normalize initial efficiency d_0 at unity and assume that relative efficiency decreases so that:

(2) $$d_0 = 1,\; d_\tau - d_{\tau-1} \le 0, \tau = 0,1,...,T .$$

We also assume that every capital good is eventually retired or scrapped so that relative efficiency declines to zero:

(3) $$\lim_{\tau \to \infty} d_\tau = 0 .$$

The decline in efficiency of capital goods gives rise to needs for replacement in order to maintain the productive capacity of the capital stock. The proportion of a given investment to be replaced at age τ, say m_τ, is equal to the decline in efficiency from age τ-1 to age τ:

(4) $$m_\tau = -(d_\tau - d_{\tau-1}), \tau = 1,...,T .$$

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in the United States (U.S. Dept. of Commerce). The data on investment are available from the authors upon request.

[4] The expression in (1) gives the quantity of capital available for production. In the dual problem, the factor price function relates the price of an asset to the flow of services derived from that asset. This dual relationship between an asset's relative efficiency and its price can be used to construct estimates of the replacement value of the capital stock.

These proportions represent mortality rates for capital goods of different ages.

Replacement requirements, say R_t, are a weighted sum of past investments:

$$R_t = \sum_{\tau=1}^{\infty} m_\tau I_{t-\tau} \ , \tag{5}$$

where the weights are the mortality rates.

Taking the first difference of expression (1) and substituting (4) and (5), we can write:

$$\begin{aligned} K_t - K_{t-1} &= I_t - \sum_{\tau=1}^{\infty} (d_\tau - d_{\tau-1}) I_{t-\tau} \\ &= I_t - \sum_{\tau=1}^{\infty} m_\tau I_{t-\tau} \\ &= I_t - R_t . \end{aligned} \tag{6}$$

The change in capital stock in any period is equal to the acquisition of investment goods less replacement requirements.

To estimate replacement, we must introduce an explicit description of the decline in efficiency. This function, *d*, may be expressed in terms of two parameters, the service life of the asset, say *L*, and a curvature or decay parameter, say β. Initially, we will hold the value of *L* constant and evaluate the efficiency function for various values of β. One possible form for the efficiency function is given by:

$$\begin{aligned} d_\tau &= (L - \tau)/(L - \beta\tau), 0 \leq \tau \leq L \\ d_\tau &= 0, \tau \geq L . \end{aligned} \tag{7}$$

This function is a form of a rectangular hyperbola that provides a general model incorporating several types of depreciation as special cases.

The value of β in (7) is restricted only to values less than or equal to one. Values greater than one yield results outside the bounds established by the restrictions on *d*. For values of β greater than zero, the function *d* approaches zero at an increasing rate. For values less than zero, *d* approaches zero at a decreasing rate.

Little empirical evidence is available to suggest a precise value for β. However, two studies provide evidence that efficiency decay occurs more rapidly in the later years of service. Utilizing data on expenditures for repairs and maintenance of 745 farm tractors covering the period 1958-74, Penson, Hughes and Nelson (1977) found that the loss of efficiency was very small in the early years of service and increased rapidly as the end of the asset's service life approached. More recently, Romain, Penson and Lambert (1987) compare the explanatory power of alternative capacity depreciation patterns for farm tractors in a model of investment behavior. They found that the concave depreciation pattern better reflects actual investment decisions.

Taken together, these studies suggest that estimates of β should be restricted to the zero-one interval. Ultimately, the β values selected for this study are 0.75 for structures and 0.5 for machinery and transportation equipment. It is assumed that the efficiency of a structure declines slowly over most of its service life until a point is reached where the cost of repairs exceeds the increased service flows derived from the repairs, at which point the structure is allowed to depreciate rapidly. The decay parameter for machinery and transportation equipment assumes that the decline in efficiency is more uniformly distributed over the asset's service life.[5]

Consider now the efficiency function that holds β constant and allows *L* to vary. The concept of variable lives is related to the concept of investment used in this study where investment is composed of bundles of different types of capital goods. Each of the different types of capital goods is a homogeneous group of capital assets in which the actual service life *L* is a

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[5] To determine the effects of changes in the value of β on estimates of capital stock, various values of β were used to construct a series of capital stocks. Changes in the value of β produce significant changes in the magnitude of the estimates of capital stock. However, there is much similarity in the rates of growth in the series over the time interval. Thus the choice of β, while

random variable reflecting quality differences, maintenance schedules, *etc*. For each type of capital good there exists some mean service life $\bar{L}$ around which there is a distribution of the actual service lives of the assets in the group. In order to determine the actual capital available for production, the actual service lives and the relative frequency of assets with these service lives must be determined. It is assumed that this distribution may be accurately depicted by the standard normal distribution:

(8)
$$P(L) = \frac{1}{\sqrt{2\pi\sigma}} e^{-(L-\bar{L})/2\sigma^2} .$$

This is a continuous function in which, for any value of L, there exists a non-zero density and, for the neighborhood around L, a non-zero probability. One property of the normal distribution is related to the infinite nature of the distribution. Without adjustment, the distribution would yield cases where assets were discarded prior to their purchase or assets with unrealistically long service lives. In order to eliminate these extremes, some adjustment is warranted to restrict the values of the actual service lives to a reasonable range around $\bar{L}$. This adjustment requires truncation of the normal at some point before and after $\bar{L}$, say by a value of δ.

This procedure requires that the remaining standard normal values be adjusted upwards by an amount equal to $\frac{1}{A}$ where A is the percent of the distribution remaining within the truncated curve. The value of A is simply the area under the normal curve between the cut-off points:

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having a pronounced effect on the level of capital stock, has little impact on the long-term trends.

(9) $$A=\int_{-\delta/\sigma}^{\delta/\sigma}\frac{1}{\sqrt{2\pi}}e^{-\frac{X^2}{2}}dX\ ,$$

where X is a standard normal variable. The adjusted normal distribution then becomes:

(10) $$P(L)=\frac{\frac{1}{\sqrt{2\pi}\sigma}e^{-(L-\bar{L})^2/2\sigma^2}}{\int_{-\delta/\sigma}^{\delta/\sigma}\frac{1}{\sqrt{2\pi}}e^{-X^2/2}dX}=\frac{e^{-(L-\bar{L})^2/2\sigma^2}}{\sigma\int_{-\delta/\sigma}^{\delta/\sigma}e^{-X^2/2}dX}.$$

The above results allow calculation of the probability of service life L occurring given the average age of a group of similar capital goods, the cut-off points of a distribution around the average age, and the standard deviation of the distribution. In this study, we truncate the distribution at points two standard deviations before and after the mean. Two standard deviations are assumed to be 0.98 times the mean service life. This dispersion parameter was chosen to conform to the observation that assets are occasionally found that are considerably older than the mean service life and that a few assets are accidentally damaged when new. Once the frequency of a service life L is known, the decay function for that particular service life may be calculated using some fixed value of β. A similar process is followed for all other possible values of L, and the decay functions are aggregated to derive a replacement function for that type of capital good.

This function may be expressed mathematically as:

(11) $$R\left(\tau\middle|\bar{L},\delta,\sigma,\beta\right)=\int_{\bar{L}-\delta}^{\bar{L}+\delta}d\left(\tau\middle|L,\beta\right)P\left(L\middle|\bar{L},\sigma,\delta\right)dL\ .$$

Unfortunately, this function is not continuous and may not be integrated to determine the values of R for each age. An alternative to integration is to use an approximation technique to estimate the area under the curve. One such method is Simpson's approximation. This technique requires dividing the area under the curve to be integrated into an even number of equal width segments. The area under the first two segments is estimated by fitting a parabola between the bounds of the first two segments in Figure 1. The area in successive pairs of segments is estimated in a similar manner. This procedure may be conveniently expressed for a general integral by:

$$\int_a^b f(x)dx = \frac{h}{3}\left[y_0 + 4y_1 + 2y_2 + 4y_3 + 2y_4 + \ldots + 2y_{n-2} + 4y_{n-1} + y_n\right], \tag{12}$$

where $y_0, y_1, \ldots, y_n$ are the ordinates of the curve $y = f(x)$ at the points $x_0 = a$, $x_1 = a + h$, $x_2 = a + 2h, \ldots,$ $x_n = a + nh = b$ corresponding to a subdivision of the interval $a \le x \le b$ into n segments each of width $h = (b - a)/n$.

Substitution of $\bar{L} + \delta$ for b and $\bar{L} - \delta$ for a in (12) yields:

$$\begin{aligned}\int_{\bar{L}-\delta}^{\bar{L}+\delta} R(\tau) = \frac{h}{3}[R(\bar{L}-\delta) + 4R(\bar{L}-\delta+\frac{2\delta}{n}) + 2R(\bar{L}-\delta+2\frac{2\delta}{n}) + \\ 4R(\bar{L}-\delta+3\frac{2\delta}{n}) + 2R(\bar{L}-\delta+4\frac{2\delta}{n}) + \ldots + \\ 2R(\bar{L}-\delta+(n-2)\frac{2\delta}{n}) + 4R(\bar{L}-\delta+(n-1)\frac{2\delta}{n}) + R(\bar{L}+\delta)].\end{aligned} \tag{13}$$

A specific example may prove useful in clarifying many of the concepts discussed here. For purposes of this example, we make the following assumptions. The average service life is 10 years. The standard deviation of the distribution is 2.5 years. The distribution is truncated at points two standard deviations before and after the mean. And depreciation occurs according to (7), where the value of β is assumed to be 0.75.

Calculation of the replacement function proceeds in two distinct steps: (1) derive the frequency distribution of discards, and (2) weight the decay functions by their corresponding discard frequencies to yield the replacement function values. The first step in the calculation of the discard frequencies is to divide the discard interval into an even number of equal width segments. For this example, we will choose 10 segments which yields a segment width of one year. This segment width was chosen largely for convenience; in general, the segment widths are not integer values. The second step requires calculating the various ages, *L*, which comprise the boundaries between the segments. These ages correspond to each of the columns shown in Table 1.

The next step is to calculate the probability or frequency of occurrence for each of the 11 asset service lives. Given our assumptions concerning the distribution about the mean life, the probability of each asset life, *L,* occurring may be derived using (10), which is reproduced below with the actual values of σ, δ, and *L*:

(14) $$P(L) = \frac{e^{-(L-10)^2/12.5}}{2.5\int_{-2}^{2} e^{-X^2/2} dX}.$$

Recall that the denominator in (14) is equal to the total area under the normal curve less the area outside the cut-off points defined by our truncation assumption. Rather than perform these calculations, this value may be obtained from a table of normal values. This is found to be 0.9546. The numerator in (14) is the ordinate of the distribution for each of the 11 lives calculated previously. These values may be obtained from a table of ordinates of the normal curve. This latter table is developed for the standard normal distribution with mean zero and standard deviation of one. For distributions with a standard deviation other than one, the ordinates derived from the table must be divided by standard deviation of the distribution actually used. These resulting calculations are shown in the first row of Table 1.

The next step requires weighting each of the ordinate values by the appropriate weight required to perform Simpson's approximation. These weights are derived from (12) and are presented in row 2 of Table 1.

The final calculation is to multiply each of the weighted frequency values by the ratio $\left(\frac{h}{3}\right)$. In our example, the segment width h is one year. Multiplying each of the weighted frequencies by this ratio yields the actual frequencies for each of the 11 service lives as shown in row 4.

We may now proceed to determine the depreciation pattern for the entire group of assets. Recall that while the mean service life is 10 years, the actual service lives range between 5 and 15 years. For each of these service lives, there exists a decay function which describes the change in relative efficiency of assets with that service life. The efficiency of these assets is determined according to (7). These calculations are performed for each of the 11 service lives and are reported in the corresponding column in Table 2. The values shown measure the efficiency of the assets at the end of the period relative to the efficiency of the asset when new. For example, assets with a 5-year service life are slightly more than 94 percent as efficient after one year of service as when new. By the end of the fifth year of service, the relative efficiency has fallen to zero.

The relative efficiency of the entire group of assets may now be determined. This is derived by weighting the efficiency of each of the 11 ages in a given year by the actual frequency of assets with that service life. These weighted efficiency values are summed across all ages to yield the relative efficiency of all assets. For example, according to Table 2, this group of assets is 97 percent as efficient after one year of service as when new.

The result of these calculations has been to derive a replacement function for a homogeneous group of capital goods. This function reflects not only changes in efficiency but also the discard distribution around the mean service life of the asset. An algorithm using this procedure for calculating capital stocks was written in SAS. A listing of the algorithm is given in the appendix.

2.2 Capital Rental Prices

An important innovation embodied in the measures of capital input presented in this paper is the rental price of capital originated by Jorgenson (1963, 1973). However, this rental price is based on the particular assumption that the pattern of capacity depreciation is characterized by a decaying geometric series. The discussion that follows relaxes this assumption.

The behavioral assumption underlying the derivation of the rental price of capital is that firms buy and sell assets so as to maximize the present value of the firm. This implies that firms will add to the capital stock so long as the present value of the net revenue generated by an additional unit of capital exceeds the purchase price of the asset. This can be stated algebraically as (Coen, 1975):

$$(15) \qquad \sum_{t=1}^{\infty}\left(p\frac{\partial y}{\partial K} - w_K \frac{\partial R_t}{\partial K} \right)(1+r)^{-t} > w_K ,$$

where P is the price of output, w_K is the price of investment goods, and r is the real discount rate.

To maximize net present value, firms will continue to add to capital stock until this equation holds as an equality. This requires that:[6]

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[6] If $r > 0$, then $\sum_{t=1}^{\infty}(1+r)^{-t} = \frac{1}{1-\left(\frac{1}{1+r}\right)} - 1 = \frac{1}{r}$. Substituting this result in (15) and rearranging

(16) $$p \frac{\partial y}{\partial K} = r\, w_K + r \sum_{t=1}^{\infty} w_K \frac{\partial R_t}{\partial K} (1+r)^{-t} = c.$$

The expression for *c* is the implicit rental price of capital corresponding to the mortality distribution *m*. The rental price consists of two components. The first term, rw_K, represents the opportunity cost associated with the initial investment. The second term, $r \sum_{t=1}^{\infty} w_K \frac{\partial R_t}{\partial K} (1+r)^{-t}$, is the present value of the cost of all future replacements required to maintain the productive capacity of the capital stock.

Let *F* denote the present value of the stream of capacity depreciation on one unit of capital according to the mortality distribution *m*:

(17) $$F = \sum_{\tau=1}^{\infty} m_\tau (1+r)^{-\tau}.$$

Since replacement at time *t* is equal to capacity depreciation at time *t*:

(18) $$\sum_{t=1}^{\infty} \frac{\partial R_t}{\partial K} (1+r)^{-t} = \sum_{t=1}^{\infty} F^t = \frac{F}{(1-F)}$$

so that

(19) $$c = \frac{r\, w_K}{(1-F)}.$$ [7, 8]

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terms yields expression (16).

[7] For the special case where $d_\tau = \delta(1-\delta)^{\tau-1}$, which was assumed by Jorgenson (1963, 1973),

$$F = \sum_{\tau=1}^{\infty} \delta(1-\delta)^{\tau-1}(1+r)^{-\tau} = \delta/(r+\delta)$$

and

$$c = w_K (r+\delta).$$

[8] A number of European countries offer subsidies on purchases of new capital goods at the rate *s*

The real rate of return r in expression (19) above is calculated as the nominal yield on government bonds less the rate of inflation as measured by the implicit deflator for gross domestic product.[9] An ex ante rate is then obtained by expressing observed real rates as an ARIMA process.[10] We then calculate F holding the required real rate of return constant for that vintage of capital goods. In this way, implicit rental prices c are calculated for each asset type.

Comparisons of levels of capital input among countries require data on relative prices of capital input. A price index that converts the ratio of the nominal value of capital service flows between two countries into an index of relative real capital input is referred to as a purchasing power parity of the currencies of the two countries. The dimensions of the purchasing power parities are the same as exchange rates. However, the purchasing power parities reflect the relative prices of the components of capital input in each country.

Although we estimate the decline in efficiency of capital goods separately for all fourteen countries, we assume that the relative efficiency of new capital goods is the same in each country. Accordingly, the appropriate purchasing power parity for new capital goods is the

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of their price, in which case the rental price falls to:

$$c = [rw_K /(1-F)](1-s) .$$

The cost of capital falls by s.

To fully realize the reduction in capital costs made possible by the subsidy, the firm would have to sell its existing capital stock and replace it with new units of capital which are eligible for the subsidy. In a simply model with no adjustment costs and perfect resale markets, this would be possible. The subsidy would create a one-time capital loss on existing capital. The prices of used capital goods would have to decline to keep the services from them competitive with the lower cost of services available from subsidized, new capital goods.

[9] The nominal rate was taken to be the average annual yield over all maturities.

[10] Observed real rates are expressed as an AR(1) process. We use this specification after examining the correlation coefficients for autocorrelation, partial and inverse autocorrelation, and performing the unit root and while noise tests. We centered each time series by subtracting its sample mean. The analysis was performed on the centered data.

purchasing power parity for the corresponding component of investment goods output.[11] To obtain the purchasing power parities for capital input, we must take into account the flow of capital services per unit of capital stock in each country. This is accomplished by multiplying the purchasing power parity for investment goods by the ratio of the price of capital input for the comparison and numeraire countries.

2.3 Land

To estimate the stock of land in each country, we construct time series price indexes of land in farms. The stock of land is then constructed implicitly as the ratio of the value land in farms to the time series price index. The rental price of land is obtained using (19), assuming zero replacement.

Differences in the relative efficiencies of land across countries prevent the direct comparison of observed prices of land. To account for these differences, indexes of relative prices of land are constructed using hedonic methods where land is viewed as a bundle of characteristics which contribute to the output derived from its use. According to the hedonic approach the price of land represents the valuation of the characteristics "that are bundled in it," and each characteristic is valued by its implicit price (Rosen, 1974). Implicit prices for the characteristics exhibit many of the properties of ordinary prices. But these prices are seldom observed directly and must be estimated from the hedonic price function. Griliches (1964) notes that if we can observe different "quality combinations" selling at different prices, it is possible to estimate, at the margin, the prices of these characteristics.

A hedonic price function expresses the price of a good or service as a function of the

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[11] Purchasing power parities for investment goods are from OECD (1999, p. 162).

quantities of the characteristics it embodies. Thus, a land hedonic function may be expressed as $w_L = W(X, D)$, where w_L represents the price of land, *X* is a vector of characteristics or quality variables and *D* is a vector of other variables. In the hedonic framework, we regard different parcels of land as alternative bundles of a smaller number of characteristics. These characteristics reflect measures of land quality.

The World Soil Resources Office of the U.S. Department of Agriculture's Natural resource Conservation Service has compiled data on characteristics that capture differences in land quality.[12] These characteristics include soil acidity, salinity, and moisture stress, among others. The "level" of each characteristic is measured as the percentage of the land area in a given region that is subject to stress.[13] A detailed description of the characteristics is provided in Table 3, while Figure 2 depicts their level. The environmental attributes most highly correlated with land prices in major agricultural areas in the European countries are seasonal moisture deficit and soil acidity. These environmental characteristics are also important in the United States, with moisture deficit dominating in the Northern and Southern Plains, and soil acidity being important in the East and Southeast. Additionally, moisture stress is the dominant environmental attribute in the western United States.

In areas with moisture stress, agriculture is not possible without irrigation. Hence irrigation (*i.e.*, the percentage of the cropland that is irrigated) is included as a separate variable.

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[12] See Eswaren, Beinroth, and Reich (2003). They develop a procedure for evaluating inherent land quality and use this procedure to assess land resources on a global scale. Given the Eswaren et al. (2003) database, we use GIS to overlay country and regional boundaries. The result of the overlay gives us the proportion of the land area of each region that is in each of the soil stress categories.

[13] A number of characteristics are common to only a few regions. In this case, we indicate environmental stress by a dummy variable equal to unity if more than 10 percent of the land area is affected and zero otherwise.

Because irrigation mitigates the negative impact of acidity on plant growth, the interaction between irrigation and soil acidity is also included in the vector of characteristics.

In addition to environmental attributes, we also include a “population accessibility” score for each region in each country. These indexes are constructed using a gravity model of urban development, which provides a measure of accessibility to population concentrations (Shi et al., 1997). A gravity index accounts for both population density and distance from that population. The index increases as population increases and/or distance from the population center decreases.

Other variables (denoted by *D*) are also included in the hedonic equation, and their selection depends not only on the underlying theory but also on the objectives of the study. If the main objective of the study is to obtain price indexes adjusted for quality, as in our case, the only variables that should be included in *D* are country dummy variables, which will capture all price effects other than quality. After allowing for differences in the levels of the characteristics, the part of the price difference not accounted for by the included characteristics will be reflected in the country dummy coefficients.

Finally, economic theory places few if any restrictions on the functional form of the hedonic price function. In this study, we adopt a generalized linear form, where the dependent variable and each of the continuous independent variables is represented by the Box-Cox transformation. This is a mathematical expression that assumes a different functional form depending on the transformation parameter, and which can assume both linear and logarithmic forms, as well as intermediate non-linear functional forms.

Thus the general functional form of our model is given by:

(20) $$w_L(\lambda_0) = \sum_{n=1}^{N} \alpha_n X_n(\lambda_n) + \sum_{m=1}^{M} \gamma_m D_m + \varepsilon,$$

where $w(\lambda_0)$ is the Box-Cox transformation of the dependent price variable, $w_L > 0$; that is,

$$w_L(\lambda_0) = \begin{cases} \dfrac{w_L^{\lambda_0} - 1}{\lambda_0}, \lambda_0 \neq 0, \\ \ln w_L, \lambda_0 = 0. \end{cases}$$

Similarly, $X_n(\lambda_n)$ is the Box-Cox transformation of the continuous quality variable X_n where $X_n(\lambda_n) = (X_n^{\lambda_n} - 1)/\lambda_n$ if $\lambda_n \neq 0$ and $X_n(\lambda_n) = \ln X_n$ if $\lambda_n = 0$. Variables represented by *D* are country dummy variables, not subject to transformation; λ, α, and γ are unknown parameter vectors, and ε is a stochastic disturbance.[14]

Table 4 contains the estimation results for our hedonic price model. As expected, the price of land is positively correlated with irrigation, and population accessibility. The coefficient on the interaction term between soil acidity and irrigation is also positive. The price of land is negatively correlated with seasonal and continuous moisture deficit. Only the positive coefficients on low temperature and high anion-exchange capacity appear counterintuitive. One possible explanation for these results is the limited number of observations.

3. Indexes of Capital Input, 1973-2002

In the previous section, we outlined the development of data on capital stock and the rental price of capital services. Estimates of capital stock by asset type for each of thirteen European countries and the United States are presented in Table 5. The corresponding capital rental prices are given in Table 6. These data are the basis for our estimates of capital input in each country.

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[14] We use the PROC QLIM procedure in SAS 9.1 to estimate the Box-Cox parameters.

We construct price indexes of capital input in each country by aggregating over the various assets using cost-share weights based on asset-specific rental prices. Our time series price indexes of capital input are reported in Table 7. The quantity indexes of capital input found in Table 8 are formed implicitly by taking the ratio of the value of capital service flows to the price index of capital input.

Our objective is to compare relative levels of capital input among countries. The values of capital input presented in Table 8 are expressed in national currencies. The problem is to find appropriate conversion factors between each national currency and a reference currency which can be used to carry out these quantity comparisons, *i.e.*, that take into account the differences in price levels among countries for each component of capital input.

Conversions to a common unit are often made using exchange rates, but it is generally recognized that these conversions do not enable the comparison of real flows between countries. Movements in relative prices do not coincide with variations in exchange rates.

In this study, we compile data on purchasing power parities for capital input, which are shown in Table 9.[15] These are relative prices of capital input in each country expressed in terms of national currencies per dollar. As a final step, we divide the relative prices of capital input by the exchange rate to translate purchasing power parities into relative prices in dollars. This allows us to decompose the values of capital service flows into price and quantity components. We report relative prices of capital input in Table 10, while Table 11 provides real values of capital input in each country.

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[15] The results in Table 9 are based on translog multilateral indexes of relative prices in the base year. The base-year purchasing power parities are then extrapolated to earlier and later years in the sample via translog time series indexes of capital rental prices for the individual countries.

Concluding Remarks

Our objective is to provide a farm-sector comparison of levels of capital input among OECD countries. This comparison begins with estimating the capital stock and rental price for each asset class for each country. Internal consistency of a measure of capital input requires that the same pattern of relative efficiency is employed in measuring both the capital stock and the rental price of capital services. The decline in efficiency affects both the level of capital stock and the corresponding rental price. The estimates of capital stocks and rental prices that underlie the data presented in Tables 10 and 11 are based on a hyperbolic decay function concave to the origin. The concave decay pattern is based on the observation that the efficiency of an asset is relatively high during the early years of service and only after some time does the asset begin to deteriorate. The same patterns of decline in efficiency are used for both capital stock and the rental price of each asset, so that the requirement for internal consistency of measures of capital input is met.

In order to compare levels of capital input among countries, we require conversion factors that reflect the comparative value of their currencies. The OECD regularly constructs estimates of the purchasing power of OECD currencies. We make use of purchasing power parities for investment goods output, taking into account the flow of capital services per unit of capital stock in each country. Relative prices of land are based on hedonic regressions. These conversion factors are used to express the value of service flows in each country in a common unit. As a final step, we form indexes of relative prices of capital input by taking the ratio of the purchasing power parity and the exchange rate. This allows us to decompose the values of capital services into price and quantity components.

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Table 1. Derivation of the Frequency Distribution of Discards for an Asset With a 10-year Mean Service Life

Variable	Segment boundaries										
	5	6	7	8	9	10	11	12	13	14	15
Frequency of service life	0.0226	0.0465	0.0814	0.1214	0.1543	0.1671	0.1543	0.1214	0.0814	0.0465	0.0226
Simpson weights	1	4	2	4	2	4	2	4	2	4	1
Weighted frequency	0.0226	0.1859	0.1627	0.4856	0.3087	0.6686	0.3087	0.4856	0.1627	0.1859	0.0226
Actual frequency	0.0075	0.0620	0.0542	0.1619	0.1029	0.2229	0.1029	0.1619	0.0542	0.0620	0.0075

Table 2. Change in Efficiency of Assets With Varying Service Lives and the Total Replacement Function

Age of Asset (years)	Decay of Assets with Service Lives of:											Total Replace - ment Function
	5	6	7	8	9	10	11	12	13	14	15	
1	0.9412	0.9524	0.9600	0.9655	0.9697	0.9730	0.9756	0.9778	0.9796	0.9811	0.9825	0.9710
2	0.8571	0.8889	0.9091	0.9231	0.9333	0.9412	0.9474	0.9524	0.9565	0.9600	0.9630	0.9363
3	0.7273	0.8000	0.8421	0.8696	0.8889	0.9032	0.9143	0.9231	0.9302	0.9362	0.9412	0.8933
4	0.5000	0.6667	0.7500	0.8000	0.8333	0.8571	0.8750	0.8889	0.9000	0.9091	0.9167	0.8380
5	0	0.4444	0.6154	0.7059	0.7619	0.8000	0.8276	0.8485	0.8649	0.8780	0.8889	0.7624
6		0	0.4000	0.5714	0.6667	0.7273	0.7692	0.8000	0.8235	0.8421	0.8571	0.6568
7			0	0.3636	0.5333	0.6316	0.6957	0.7407	0.7742	0.8000	0.8205	0.5437
8				0	0.3333	0.5000	0.6000	0.6667	0.7143	0.7500	0.7778	0.4064
9					0	0.3077	0.4706	0.5714	0.6400	0.6897	0.7273	0.2924
10						0	0.2857	0.4444	0.5455	0.6154	0.6667	0.1741
11							0	0.2667	0.4211	0.5217	0.5926	0.1028
12								0	0.2500	0.4000	0.5000	0.0421
13									0	0.2353	0.3810	0.0175
14										0	0.2222	0.0017
15											0	0

Table 3. Definition of Variables in Hedonic Regression

Variable	Unit	Definition
Land price	Local currency	Price per hectare
Population accessibility	Index	A measure of the size and proximity of nearby population centers
Ice	Dummy variable	Covered by ice
Ocean	"	Covered by ocean
Inland water	"	Covered by lakes or rivers
Low temperature	"	Having soils with mean annual temperature < 0^{o}C and mean summer temperature < 10^{o}C
Salinity	"	Having soils with pH > 9.0 (i.e. where the salt concentration is so high that it prevents plant growth)
Low water storage	"	Regions where the ability of the soil to store moisture is low
Excess water	"	Having soils saturated with water during long periods of the year
High organic matter	"	Regions with peats or organic soils
High shrink/swell	"	Having soils dominated by a mineral that causes soils to crack during the dry season
High anion	"	Having volcanic soils where phosphate is made unavailable to plants
Few constraints	"	Having soils with few or no major soil-related constraints and a generally temperate climate
Acidity	Percent of land area	Having soils with pH<5.2 (i.e.,where soil acidity reduces root growth and prevents nutrient uptake)
Moisture deficit	"	Regions which experience soil moisture stress for 4 or more months in a year
Moisture stress	"	Regions which experience continuous moisture stress
Irrigation	"	Area irrigated

Source: World Soils Group, Natural Resource and Conservation Service, U.S. Department of Agriculture.

Table 4. Regression of Land Prices on Characteristics

Variables	∃	t-Statistic	λ	t-Statistic
Dependent Variable:				
Price of Land			0	Fixed
Explanatory Variables:				
Dummy Variables:				
D1 (Belgium)	10.402***	5.39		
D2 (Germany)	7.807***	16.84		
D3 (Denmark)	7.356***	2.94		
D4 (Greece)	12.696	1.15		
D5 (Spain)	11.839***	14.43		
D6 (France)	7.815***	20.44		
D7 (Ireland)	7.009***	3.18		
D8 (Italy)	14.778***	13.98		
D9 (Luxembourg)	11.128	0.59		
D10 (Netherlands)	8.125***	2.97		
D11 (Portugal)	10.920***	3.85		
D12 (Sweden)	7.507	0.92		
D13 (United Kingdom)	5.989***	3.64		
D14 (United States)	5.917***	48.99		
Inland water	-0.183	-0.97		
Ice cover	-0.289	-0.93		
Ocean	0.256	0.12		
Low temperature	3.526***	2.99		
Salinity	0.014	0.11		
Acidity	-0.199	-0.31	3.004	0.30
Moisture deficit	-0.445**	-1.96	1.084**	1.91
Moisture stress	-0.536***	-3.02	0.646***	3.13
Low water storage	0.539	0.88		
Excess water	-0.131	-0.70		
High organic matter	0.146	0.27		
High shrink/swell	-0.384***	-2.72		
High anion	0.610***	2.59		
Irrigation	0.034**	2.32	1.488***	5.52
Acidity* irrigation	0.019*	1.72	0.330*	1.77
Few constraints	0.107*	1.76		
Accessibility	0.222***	18.41	0.035	1.52
Model summary:				
Number of observations	2842			
Log Likelihood	-618.771			
AIC	1314			
Schwarz Criterion	1504			

Note: * denotes significance at the 10-percent level; ** at the 5-percent level; and *** at the 1-percent level.

Table 5. Capital stock, 1972-2001 (millions of 1996 national currencies, except Italy: billions of national currencies)

Year Ending	Belgium	Denmark	Germany 1/	Greece	Spain	France	Ireland	Italy	Luxem-bourg	Nether-lands	Portugal	Sweden	United Kingdom	United States
Transportation Equipment														
1972	9245	3326	11169	85596	599109	16322	248	3076	2062	1177	19391	6372	580	21413
1973	10170	3888	11556	94517	627781	17983	273	3236	2177	1355	22910	6066	611	21581
1974	11134	4333	11896	97190	656554	19940	266	3390	2180	1555	27244	5995	627	21511
1975	11353	4801	12301	99860	679435	21034	276	3406	2172	1659	31983	6093	630	21664
1976	12035	5394	12939	103108	717830	22469	293	3513	2085	1780	35076	6173	661	22986
1977	12418	5809	13569	105564	727137	23143	315	3564	2317	2008	37984	6049	685	24316
1978	13118	6059	13999	105050	757934	23280	348	3639	2400	2229	39209	5767	694	25408
1979	13526	6100	14744	101811	770846	23913	383	3639	2254	2620	40723	5685	720	26781
1980	13029	5818	15302	95657	835235	24531	411	3868	2463	2726	41228	5379	700	26600
1981	12539	5507	16069	88828	811278	25568	447	4029	2290	2819	41016	5274	703	25588
1982	12015	5243	16272	84415	778654	25626	456	4128	2175	2868	39455	5024	691	24230
1983	11461	4905	16740	78052	737770	25472	452	4155	2022	3077	37510	4810	698	23290
1984	11321	4608	16899	75168	703016	25231	453	4107	1828	3110	34428	4648	705	22226
1985	10913	4456	17009	73521	678239	24393	458	3973	1702	3117	31266	4384	696	20836
1986	10712	4413	16969	66302	650469	23033	475	3937	1560	2994	31039	4101	692	19436
1987	11076	4245	17271	58475	628354	22880	479	3933	1520	3035	32709	3936	736	18792
1988	11205	4035	17533	52064	606473	22152	494	3928	1518	2995	37266	3756	762	18480
1989	11334	4045	17986	50765	582512	22888	553	3961	1527	3031	40796	3750	793	18426
1990	11493	4037	18436	48109	561529	23375	618	3984	1518	3115	45008	3668	803	18472
1991	11036	4072	19315	45576	536594	23263	639	3990	1572	3174	48344	3434	787	18184
1992	10848	4005	19734	43832	501738	22837	650	3924	1579	3264	51557	3255	779	17850
1993	10395	3863	19502	41687	467544	22203	654	3770	1562	3136	53817	3089	801	17683
1994	9869	3735	19210	40029	449929	22073	691	3653	1564	3040	56078	3026	830	17508
1995	9465	3676	18940	37922	439891	22208	702	3608	1511	2960	58484	2972	873	17578
1996	9048	3582	19035	35479	444981	22802	713	3576	1345	2884	61114	2943	904	18119
1997	8905	3612	18670	32812	465039	23383	714	3541	1315	2853	63973	2957	904	19217
1998	8908	3600	18413	30087	495081	24070	705	3520	1299	2829	66833	2950	874	20493
1999	9057	3557	18213	27399	513684	24775	692	3526	1255	2842	69597	2988	845	21451
2000	9211	3554	18078	24748	521368	25585	675	3554	1233	2872	72277	3033	821	22326
2001	9362	3610	17782	22138	521454	25974	657	3602	1214	2902	74886	3068	816	23351

Table 5. Continued

Year Ending	Belgium	Denmark	Germany 1/	Greece	Spain	France	Ireland	Italy	Luxem-bourg	Nether-lands	Portugal	Sweden	United Kingdom	United States
Machinery														
1972	117295	22877	83187	616527	1126095	228827	960	38070	10631	16765	95875	60496	10915	145820
1973	125072	27727	85561	693525	1140065	247381	1130	40929	11102	18184	115093	59530	10904	155059
1974	130105	30880	85767	749695	1134283	266165	1189	43604	11466	19365	140115	59126	10591	162345
1975	131415	33671	85884	812280	1129766	280817	1256	46755	11490	19973	168523	59790	10241	166209
1976	136093	36660	86391	862169	1142517	293959	1379	51980	10827	20663	192276	60829	10050	169944
1977	140260	39388	87843	903764	1169296	301153	1547	56967	10436	22035	216927	60824	9919	172558
1978	147296	42538	89790	915919	1218322	308936	1694	61946	10840	23808	232493	60272	9865	177770
1979	150172	45862	91322	926050	1291477	315695	1838	67024	11342	25530	251304	59615	9725	183462
1980	148703	46551	91470	915669	1371387	320324	1886	74068	10842	26359	272310	58012	9358	183712
1981	145278	46053	89906	903730	1466333	322953	1933	77916	10815	26824	289463	56397	9115	181492
1982	144403	45809	88677	887537	1548118	326625	1939	80045	11517	27387	299013	55521	9072	173880
1983	141245	45800	88388	875261	1634729	326983	1941	81002	11879	28166	299606	54783	9264	165553
1984	138890	46396	87324	893658	1708272	328470	1935	81601	11949	28401	297880	54597	9524	157189
1985	136546	47859	86204	910491	1732717	326792	1930	81791	11704	28824	296708	53648	9614	146562
1986	136347	48998	85141	872890	1787233	322649	1904	81642	11412	28548	316184	52317	9554	135892
1987	134649	49156	83752	823391	1820699	320576	1870	81055	11318	28515	340067	51107	9554	128422
1988	132667	48598	82895	785377	1806873	321919	1845	80829	11333	28414	376730	50461	9485	121963
1989	130126	48752	82682	751871	1747895	323842	1861	80505	11348	28372	407584	50080	9425	117261
1990	127872	48730	83142	724138	1661796	323159	1838	79605	11951	28530	443495	49213	9267	113672
1991	122686	47745	82386	695679	1623320	319182	1802	78405	12572	28490	478110	47391	9056	109420
1992	120150	46608	81373	671129	1517961	312481	1778	77121	12887	28634	513661	45105	8920	105009
1993	115561	44771	79393	649260	1422019	305189	1748	75413	13047	28149	542385	42944	9021	101315
1994	110147	43771	77462	631162	1345442	300513	1761	74518	13300	27523	571344	41945	9224	97889
1995	105505	43366	75883	608975	1291195	297967	1818	74597	13276	26970	602001	41041	9545	94123
1996	101026	42318	75249	583306	1264244	301840	1847	74756	12513	25512	634765	40128	9749	91279
1997	97762	42615	73556	554874	1216394	302792	1868	74764	12615	25224	669403	39884	9696	89175
1998	95198	42445	72579	525199	1172856	304918	1919	74892	12817	24914	703888	39475	9373	87823
1999	93427	41983	72006	495119	1113532	307504	1977	75310	12812	24779	737101	39541	9036	86128
2000	92356	41879	71782	464673	1066607	311485	2033	76001	12926	24762	769050	39626	8713	84683
2001	91448	42347	70796	433890	1017889	312939	2081	76944	13010	24804	799756	39628	8543	84423

Table 5. Continued

Year Ending	Belgium	Denmark	Germany 1/	Greece	Spain	France	Ireland	Italy	Luxem-bourg	Nether-lands	Portugal	Sweden	United Kingdom	United States
Non-residental Structures														
1972	60889	80486	140018	3707106	3986618	116327	6892	129335	45961	11489	452273	25150	13417	130054
1973	65793	83115	140663	3800772	4168633	126604	7103	129112	46358	12689	479759	25661	13917	132858
1974	69784	85428	141696	3844832	4314324	136228	7188	128712	46859	13716	513318	26136	14403	136618
1975	72294	87533	142865	3909285	4433140	144310	7247	128548	47664	14474	552297	26726	14704	138088
1976	76103	89747	144183	3974013	4514383	152320	7394	128240	49228	15336	588597	27340	14867	140528
1977	80205	92150	145692	4077334	4709685	159642	7543	127603	48075	16670	632250	27789	14967	143272
1978	85411	95441	147203	4161351	4853780	166735	7685	126833	47524	18245	674837	28401	15124	147111
1979	89509	99099	148364	4268162	4971532	174160	7950	125780	47037	19895	724676	28984	15297	151276
1980	93229	100714	149344	4336445	5078628	181770	8169	127703	47052	21242	798414	29427	15511	153006
1981	96438	100847	150002	4385006	5187077	188540	8372	129517	47137	22398	864837	29564	15663	152929
1982	97958	101041	150717	4424454	5376649	194299	8512	131423	46906	23466	885033	29739	15901	152114
1983	99942	101147	151621	4461532	5592285	199166	8567	132985	47313	24675	904354	29914	16181	150461
1984	102018	101331	152299	4536974	5678499	204564	8584	134910	47195	25553	919694	30025	16449	148670
1985	103774	101488	152896	4613157	5767642	209612	8558	137066	46839	26501	927685	29892	16561	145702
1986	104751	102135	153213	4630335	5825571	214459	8507	138593	46079	28415	932686	29728	16724	142853
1987	108529	102691	153403	4628034	5854718	220209	8488	140115	45432	29125	937845	29642	16818	140281
1988	111169	102658	153577	4642702	5857492	226388	8449	142474	44897	30154	942970	29611	16929	137152
1989	113693	102884	153763	4652587	5885709	232442	8428	144827	44604	31423	950486	29651	17049	134228
1990	117680	103551	154006	4661413	5916144	238956	8530	147403	44331	32713	962160	29801	17245	131353
1991	120902	103495	154410	4662362	5944600	245924	8607	149911	43894	34091	972035	30000	17284	128443
1992	125745	103902	154946	4658869	5976552	251754	8682	151926	43349	35027	975466	30427	17251	125238
1993	127382	103361	155454	4648724	6006072	255828	8594	153515	42570	35881	977629	31057	17235	122304
1994	127943	103428	155912	4634107	6034502	259437	8549	155311	41775	36593	978005	31976	17315	119530
1995	129281	103389	156603	4611214	6061692	263960	8628	157277	40903	37321	977069	32769	17301	116568
1996	131446	102916	158090	4580475	6086951	270088	8754	159296	37921	38438	971785	32552	17308	114088
1997	134455	103332	158597	4542498	6110870	275145	8778	160864	37074	39297	969225	33052	17290	111650
1998	137843	104026	159152	4499036	6133404	280507	8777	162243	36261	40273	967806	33859	17205	109488
1999	141572	104352	159708	4451069	6154716	286315	8720	163154	35462	41830	965773	34561	16985	107697
2000	145164	105072	160204	4398661	6175438	292838	8685	163599	34529	43028	963130	35230	16726	106405
2001	148553	106162	160602	4341877	6199304	299664	8603	163584	33716	44219	959885	35952	16529	104346

Table 5. Continued

Year Ending	Belgium	Denmark	Germany 1/	Greece	Spain	France	Ireland	Italy	Luxem-bourg	Nether-lands	Portugal	Sweden	United Kingdom	United States
Land:														
1972	685074	41355	480522	15200579	22473516	756356	23622	403139	292190	95262	1029486	34611	87489	693341
1973	679598	40828	477619	15156994	22476903	754786	23677	411525	289993	94252	1024794	34697	87641	689517
1974	697210	40825	475245	15254303	22113705	745157	23014	418785	289993	93834	1020634	34571	87970	690259
1975	691387	40802	474050	15521494	21999004	744146	23012	418941	287796	93423	1016220	34568	87919	693645
1976	663539	41120	471442	15460204	21744808	740922	23161	411414	289993	92832	1013212	34486	86897	697218
1977	658111	41048	466520	15644890	21606292	739607	23212	413126	285599	92164	1008517	34492	86951	698518
1978	651187	40980	439763	15578256	21399426	739692	23289	412136	285599	91605	1002736	34330	86870	695867
1979	644096	40766	437287	15662983	21314702	723478	23123	411346	285599	91000	999969	34236	86773	690287
1980	639554	40661	435666	15703257	21290502	722402	23182	410168	281205	90564	995184	34079	86208	683459
1981	637073	40521	433554	15717347	21301674	721248	23197	413885	279008	90312	991432	34224	86077	677036
1982	635265	39914	431691	15803571	21296923	719294	23225	402855	281205	90477	986051	34112	85995	672248
1983	633509	40076	430303	15869082	21331954	717600	23249	402617	281205	90828	983295	34024	86011	668760
1984	630788	39726	429187	16055406	21373046	718901	23314	416418	279008	91285	979670	33890	85918	665889
1985	627583	39530	428403	16068429	21323530	713453	23347	414827	281205	90273	975114	33729	85816	662993
1986	624868	39226	426858	16147404	21349786	710749	24256	413664	279008	90374	973816	33528	85851	659500
1987	621239	39017	425212	16188921	21414914	696992	23854	412471	276811	90291	978533	33319	85697	655061
1988	617738	38841	424214	16276831	21371935	714734	23271	390843	276811	90001	969748	33096	85396	650162
1989	615919	39026	423380	16271264	21268207	712486	22607	371150	279008	90111	984673	32997	85150	645518
1990	613208	38759	469016	16194329	21003466	710106	22234	366512	276811	89448	975543	32364	84933	641963
1991	611301	38640	466883	16349674	20892705	707787	22105	366041	276811	89262	983737	32108	84928	640331
1992	617285	36120	469057	16412928	20721307	697425	22038	363714	279008	89336	969812	32245	85791	641154
1993	622008	33991	470843	16470721	20574995	695576	21977	362885	279008	88739	967141	32249	85597	643565
1994	623653	34615	470022	16528713	20225450	694138	21985	363399	279008	89082	963147	32093	84998	646468
1995	627950	35039	468542	16610100	20031539	692736	21753	360845	276811	83541	949552	32614	84999	648924
1996	631873	35469	467605	16488580	20211304	692163	22170	359014	279008	87867	943232	32463	84697	650124
1997	635733	35281	468467	16056189	20142860	691341	22092	360613	279008	87118	943510	32292	84400	649616
1998	636726	34083	460061	15933947	19890426	718289	22107	368569	279008	88420	903235	31864	84273	647387
1999	636955	34099	457212	15745633	19728639	716658	22027	370993	279008	87904	905972	31389	82838	643767
2000	634596	34380	456439	15554970	19726606	714468	21863	368556	276811	86786	899546	31253	84286	639096
2001	635701	34249	454463	15365449	19733462	719184	21690	367859	276811	87589	889092	31087	83188	633771

1/ Includes former East Germany beginning in 1991.

Table 6. Capital rental prices, 1973-2002

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-bourg	Nether-lands	Portugal	Sweden	United Kingdom	United States
Transportation equipment:														
1973	0.0640	0.0299	0.0451	0.0031	0.0159	0.0311	0.0285	0.0098	0.0358	0.0717	0.0049	0.0241	0.0247	0.0559
1974	0.0740	0.0379	0.0500	0.0036	0.0168	0.0369	0.0315	0.0131	0.0424	0.0770	0.0050	0.0254	0.0305	0.0596
1975	0.0752	0.0386	0.0520	0.0042	0.0194	0.0409	0.0397	0.0195	0.0481	0.0818	0.0050	0.0313	0.0402	0.0642
1976	0.0803	0.0422	0.0561	0.0051	0.0202	0.0448	0.0499	0.0206	0.0576	0.0869	0.0065	0.0357	0.0497	0.0683
1977	0.0863	0.0466	0.0614	0.0061	0.0260	0.0531	0.0606	0.0260	0.0558	0.0955	0.0112	0.0402	0.0616	0.0743
1978	0.0913	0.0546	0.0610	0.0073	0.0311	0.0607	0.0692	0.0302	0.0617	0.0994	0.0158	0.0447	0.0690	0.0823
1979	0.0976	0.0598	0.0648	0.0090	0.0391	0.0645	0.0681	0.0371	0.0655	0.1044	0.0202	0.0461	0.0777	0.0946
1980	0.1106	0.0671	0.0688	0.0110	0.0434	0.0721	0.0684	0.0348	0.0774	0.1154	0.0235	0.0597	0.0866	0.1048
1981	0.1280	0.0765	0.0805	0.0140	0.0646	0.0873	0.0788	0.0454	0.0866	0.1313	0.0281	0.0662	0.0976	0.1267
1982	0.1333	0.0900	0.0838	0.0177	0.0780	0.1075	0.0892	0.0547	0.0950	0.1359	0.0329	0.0739	0.1060	0.1320
1983	0.1351	0.0940	0.0814	0.0209	0.0918	0.1156	0.1007	0.0611	0.0939	0.1304	0.0501	0.0855	0.1119	0.1390
1984	0.1403	0.0941	0.0849	0.0231	0.1053	0.1058	0.1096	0.0642	0.1002	0.1324	0.0593	0.0845	0.1191	0.1517
1985	0.1423	0.0959	0.0870	0.0275	0.1089	0.1132	0.1220	0.0729	0.0827	0.1363	0.0649	0.0901	0.1259	0.1465
1986	0.1381	0.0991	0.0854	0.0367	0.1203	0.1241	0.1291	0.0767	0.1039	0.1347	0.0990	0.0947	0.0920	0.1414
1987	0.1362	0.1099	0.0842	0.0415	0.1275	0.1232	0.1379	0.0796	0.1042	0.1446	0.1112	0.1004	0.1050	0.1466
1988	0.1426	0.1213	0.0906	0.0491	0.1399	0.1378	0.1482	0.0953	0.1113	0.1548	0.1053	0.1037	0.1194	0.1514
1989	0.1519	0.1234	0.1004	0.0603	0.1509	0.1503	0.1514	0.0987	0.1205	0.1678	0.1058	0.1079	0.1290	0.1548
1990	0.1559	0.1362	0.1303	0.0801	0.1599	0.1618	0.1503	0.1018	0.1253	0.1840	0.0974	0.1164	0.1391	0.1569
1991	0.1649	0.1440	0.1134	0.1016	0.1776	0.1661	0.1513	0.1045	0.1342	0.1903	0.0806	0.1231	0.1441	0.1595
1992	0.1670	0.1419	0.1056	0.1154	0.1409	0.1683	0.1544	0.1255	0.1384	0.1881	0.0589	0.1348	0.1612	0.1635
1993	0.1647	0.1377	0.0989	0.1320	0.1306	0.1609	0.1569	0.1294	0.1356	0.1806	0.0290	0.1605	0.1684	0.1697
1994	0.1684	0.1449	0.1029	0.1361	0.1482	0.1768	0.1537	0.1377	0.1385	0.1839	0.0630	0.1383	0.1739	0.1805
1995	0.1745	0.1569	0.1076	0.1517	0.1666	0.1808	0.1719	0.1606	0.1590	0.1867	0.0530	0.1471	0.1822	0.1845
1996	0.1756	0.1567	0.1062	0.1629	0.1755	0.1782	0.1692	0.1638	0.1756	0.1853	0.1022	0.1432	0.1800	0.1856
1997	0.1770	0.1490	0.1056	0.1483	0.1733	0.1749	0.1685	0.1724	0.1749	0.2034	0.1046	0.1407	0.1730	0.1844
1998	0.1728	0.1379	0.1059	0.1515	0.1877	0.1713	0.1600	0.1752	0.1714	0.1968	0.0964	0.1390	0.1665	0.1765
1999	0.1717	0.1424	0.1037	0.1466	0.1725	0.1732	0.1595	0.1831	0.1700	0.1974	0.1036	0.1402	0.1561	0.1842
2000	0.1821	0.1512	0.1115	0.1458	0.1785	0.1795	0.1637	0.1787	0.1776	0.2100	0.1419	0.1381	0.1487	0.1868
2001	0.1826	0.1511	0.1161	0.1659	0.1637	0.1808	0.1656	0.1830	0.1776	0.2131	0.0997	0.1410	0.1453	0.1793
2002	0.1838	0.1486	0.1099	0.1817	0.1687	0.1748	0.1647	0.1805	0.1782	0.2141	0.0714	0.1495	0.1414	0.1796

Table 6. Continued

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-bourg	Nether-lands	Portugal	Sweden	United Kingdom	United States
Machinery:														
1973	0.0494	0.0256	0.0553	0.0027	0.0144	0.0231	0.0192	0.0128	0.0249	0.0453	0.0038	0.0240	0.0198	0.0337
1974	0.0561	0.0329	0.0610	0.0033	0.0172	0.0291	0.0221	0.0170	0.0287	0.0506	0.0039	0.0275	0.0250	0.0371
1975	0.0553	0.0327	0.0611	0.0037	0.0191	0.0312	0.0273	0.0188	0.0322	0.0521	0.0038	0.0306	0.0316	0.0423
1976	0.0587	0.0357	0.0653	0.0043	0.0215	0.0330	0.0320	0.0201	0.0401	0.0559	0.0050	0.0332	0.0383	0.0453
1977	0.0632	0.0396	0.0710	0.0048	0.0253	0.0377	0.0393	0.0225	0.0380	0.0624	0.0084	0.0354	0.0441	0.0500
1978	0.0671	0.0465	0.0711	0.0056	0.0290	0.0427	0.0445	0.0258	0.0412	0.0670	0.0108	0.0378	0.0472	0.0556
1979	0.0712	0.0509	0.0765	0.0067	0.0326	0.0456	0.0454	0.0284	0.0455	0.0732	0.0132	0.0410	0.0537	0.0629
1980	0.0814	0.0570	0.0828	0.0081	0.0379	0.0515	0.0500	0.0285	0.0568	0.0838	0.0165	0.0503	0.0576	0.0740
1981	0.0970	0.0648	0.0979	0.0111	0.0442	0.0661	0.0583	0.0367	0.0644	0.0995	0.0204	0.0575	0.0664	0.0912
1982	0.1028	0.0767	0.0993	0.0135	0.0526	0.0830	0.0644	0.0425	0.0730	0.0994	0.0267	0.0633	0.0692	0.0958
1983	0.1031	0.0787	0.0971	0.0166	0.0599	0.0876	0.0718	0.0480	0.0719	0.0902	0.0422	0.0704	0.0752	0.1044
1984	0.1075	0.0774	0.1002	0.0192	0.0690	0.0798	0.0783	0.0522	0.0762	0.0889	0.0537	0.0722	0.0766	0.1158
1985	0.1077	0.0787	0.1018	0.0222	0.0691	0.0847	0.0878	0.0564	0.0773	0.0881	0.0546	0.0789	0.0783	0.1078
1986	0.1023	0.0821	0.0995	0.0280	0.0744	0.0888	0.0870	0.0602	0.0757	0.0873	0.0799	0.0818	0.0766	0.0963
1987	0.0998	0.0916	0.0977	0.0305	0.0785	0.0895	0.0943	0.0645	0.0755	0.0934	0.0875	0.0858	0.0848	0.1001
1988	0.1056	0.1015	0.1027	0.0364	0.0904	0.1010	0.1044	0.0692	0.0809	0.1010	0.0846	0.0931	0.1001	0.1036
1989	0.1142	0.1040	0.1135	0.0453	0.1002	0.1097	0.1093	0.0760	0.0892	0.1123	0.0817	0.0977	0.1029	0.1068
1990	0.1173	0.1158	0.1208	0.0578	0.1083	0.1212	0.0970	0.0838	0.0918	0.1282	0.0745	0.1098	0.1080	0.1105
1991	0.1253	0.1230	0.1312	0.0740	0.1177	0.1250	0.0968	0.0948	0.0989	0.1331	0.0608	0.1140	0.1129	0.1108
1992	0.1265	0.1212	0.1215	0.0835	0.1157	0.1250	0.1054	0.0958	0.1021	0.1316	0.0405	0.1126	0.1271	0.1113
1993	0.1211	0.1163	0.1122	0.0955	0.1025	0.1130	0.1080	0.0988	0.0972	0.1226	0.0195	0.1132	0.1413	0.1119
1994	0.1230	0.1230	0.1165	0.0977	0.1065	0.1208	0.1045	0.1023	0.0990	0.1275	0.0419	0.1091	0.1441	0.1186
1995	0.1287	0.1346	0.1211	0.1059	0.1184	0.1250	0.1252	0.1083	0.1109	0.1300	0.0366	0.1176	0.1478	0.1250
1996	0.1288	0.1334	0.1197	0.1129	0.1260	0.1221	0.1163	0.1170	0.1174	0.1274	0.0657	0.1136	0.1481	0.1285
1997	0.1325	0.1249	0.1153	0.1056	0.1315	0.1199	0.1128	0.1206	0.1150	0.1353	0.0707	0.1108	0.1407	0.1321
1998	0.1314	0.1160	0.1146	0.1118	0.1355	0.1159	0.1066	0.1217	0.1095	0.1346	0.0634	0.1092	0.1363	0.1284
1999	0.1323	0.1204	0.1151	0.1126	0.1536	0.1181	0.1058	0.1239	0.1091	0.1414	0.0664	0.1103	0.1326	0.1354
2000	0.1357	0.1292	0.1243	0.1123	0.1868	0.1229	0.1160	0.1244	0.1167	0.1516	0.0898	0.1083	0.1298	0.1371
2001	0.1357	0.1267	0.1290	0.1257	0.2059	0.1230	0.1207	0.1278	0.1157	0.1475	0.0624	0.1111	0.1246	0.1299
2002	0.1354	0.1229	0.1255	0.1330	0.2108	0.1167	0.1187	0.1269	0.1142	0.1422	0.0445	0.1240	0.1250	0.1287

Table 6. Continued

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-bourg	Nether-lands	Portugal	Sweden	United Kingdom	United States
Machinery:														
1973	0.0494	0.0256	0.0553	0.0027	0.0144	0.0231	0.0192	0.0128	0.0249	0.0453	0.0038	0.0240	0.0198	0.0337
1974	0.0561	0.0329	0.0610	0.0033	0.0172	0.0291	0.0221	0.0170	0.0287	0.0506	0.0039	0.0275	0.0250	0.0371
1975	0.0553	0.0327	0.0611	0.0037	0.0191	0.0312	0.0273	0.0188	0.0322	0.0521	0.0038	0.0306	0.0316	0.0423
1976	0.0587	0.0357	0.0653	0.0043	0.0215	0.0330	0.0320	0.0201	0.0401	0.0559	0.0050	0.0332	0.0383	0.0453
1977	0.0632	0.0396	0.0710	0.0048	0.0253	0.0377	0.0393	0.0225	0.0380	0.0624	0.0084	0.0354	0.0441	0.0500
1978	0.0671	0.0465	0.0711	0.0056	0.0290	0.0427	0.0445	0.0258	0.0412	0.0670	0.0108	0.0378	0.0472	0.0556
1979	0.0712	0.0509	0.0765	0.0067	0.0326	0.0456	0.0454	0.0284	0.0455	0.0732	0.0132	0.0410	0.0537	0.0629
1980	0.0814	0.0570	0.0828	0.0081	0.0379	0.0515	0.0500	0.0285	0.0568	0.0838	0.0165	0.0503	0.0576	0.0740
1981	0.0970	0.0648	0.0979	0.0111	0.0442	0.0661	0.0583	0.0367	0.0644	0.0995	0.0204	0.0575	0.0664	0.0912
1982	0.1028	0.0767	0.0993	0.0135	0.0526	0.0830	0.0644	0.0425	0.0730	0.0994	0.0267	0.0633	0.0692	0.0958
1983	0.1031	0.0787	0.0971	0.0166	0.0599	0.0876	0.0718	0.0480	0.0719	0.0902	0.0422	0.0704	0.0752	0.1044
1984	0.1075	0.0774	0.1002	0.0192	0.0690	0.0798	0.0783	0.0522	0.0762	0.0889	0.0537	0.0722	0.0766	0.1158
1985	0.1077	0.0787	0.1018	0.0222	0.0691	0.0847	0.0878	0.0564	0.0773	0.0881	0.0546	0.0789	0.0783	0.1078
1986	0.1023	0.0821	0.0995	0.0280	0.0744	0.0888	0.0870	0.0602	0.0757	0.0873	0.0799	0.0818	0.0766	0.0963
1987	0.0998	0.0916	0.0977	0.0305	0.0785	0.0895	0.0943	0.0645	0.0755	0.0934	0.0875	0.0858	0.0848	0.1001
1988	0.1056	0.1015	0.1027	0.0364	0.0904	0.1010	0.1044	0.0692	0.0809	0.1010	0.0846	0.0931	0.1001	0.1036
1989	0.1142	0.1040	0.1135	0.0453	0.1002	0.1097	0.1093	0.0760	0.0892	0.1123	0.0817	0.0977	0.1029	0.1068
1990	0.1173	0.1158	0.1208	0.0578	0.1083	0.1212	0.0970	0.0838	0.0918	0.1282	0.0745	0.1098	0.1080	0.1105
1991	0.1253	0.1230	0.1312	0.0740	0.1177	0.1250	0.0968	0.0948	0.0989	0.1331	0.0608	0.1140	0.1129	0.1108
1992	0.1265	0.1212	0.1215	0.0835	0.1157	0.1250	0.1054	0.0958	0.1021	0.1316	0.0405	0.1126	0.1271	0.1113
1993	0.1211	0.1163	0.1122	0.0955	0.1025	0.1130	0.1080	0.0988	0.0972	0.1226	0.0195	0.1132	0.1413	0.1119
1994	0.1230	0.1230	0.1165	0.0977	0.1065	0.1208	0.1045	0.1023	0.0990	0.1275	0.0419	0.1091	0.1441	0.1186
1995	0.1287	0.1346	0.1211	0.1059	0.1184	0.1250	0.1252	0.1083	0.1109	0.1300	0.0366	0.1176	0.1478	0.1250
1996	0.1288	0.1334	0.1197	0.1129	0.1260	0.1221	0.1163	0.1170	0.1174	0.1274	0.0657	0.1136	0.1481	0.1285
1997	0.1325	0.1249	0.1153	0.1056	0.1315	0.1199	0.1128	0.1206	0.1150	0.1353	0.0707	0.1108	0.1407	0.1321
1998	0.1314	0.1160	0.1146	0.1118	0.1355	0.1159	0.1066	0.1217	0.1095	0.1346	0.0634	0.1092	0.1363	0.1284
1999	0.1323	0.1204	0.1151	0.1126	0.1536	0.1181	0.1058	0.1239	0.1091	0.1414	0.0664	0.1103	0.1326	0.1354
2000	0.1357	0.1292	0.1243	0.1123	0.1868	0.1229	0.1160	0.1244	0.1167	0.1516	0.0898	0.1083	0.1298	0.1371
2001	0.1357	0.1267	0.1290	0.1257	0.2059	0.1230	0.1207	0.1278	0.1157	0.1475	0.0624	0.1111	0.1246	0.1299
2002	0.1354	0.1229	0.1255	0.1330	0.2108	0.1167	0.1187	0.1269	0.1142	0.1422	0.0445	0.1240	0.1250	0.1287

Table 6. Continued

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-bourg	Nether-lands	Portugal	Sweden	United Kingdom	United States
Non-residential structures:														
1973	0.0207	0.0086	0.0183	0.0008	0.0031	0.0096	0.0039	0.0060	0.0112	0.0178	0.0011	0.0089	0.0131	0.0166
1974	0.0233	0.0126	0.0209	0.0009	0.0037	0.0127	0.0055	0.0086	0.0130	0.0209	0.0012	0.0103	0.0168	0.0168
1975	0.0214	0.0098	0.0171	0.0010	0.0039	0.0134	0.0058	0.0075	0.0134	0.0200	0.0011	0.0116	0.0186	0.0168
1976	0.0227	0.0110	0.0190	0.0012	0.0044	0.0136	0.0069	0.0099	0.0164	0.0214	0.0014	0.0117	0.0220	0.0167
1977	0.0250	0.0131	0.0226	0.0013	0.0049	0.0152	0.0080	0.0137	0.0165	0.0254	0.0024	0.0117	0.0247	0.0186
1978	0.0275	0.0174	0.0214	0.0015	0.0060	0.0168	0.0088	0.0180	0.0188	0.0285	0.0029	0.0117	0.0275	0.0218
1979	0.0299	0.0197	0.0246	0.0018	0.0072	0.0177	0.0088	0.0270	0.0210	0.0333	0.0030	0.0125	0.0328	0.0263
1980	0.0394	0.0225	0.0286	0.0026	0.0097	0.0208	0.0107	0.0089	0.0296	0.0421	0.0039	0.0170	0.0370	0.0329
1981	0.0539	0.0268	0.0391	0.0038	0.0131	0.0306	0.0143	0.0115	0.0412	0.0550	0.0049	0.0220	0.0419	0.0448
1982	0.0573	0.0340	0.0386	0.0050	0.0168	0.0415	0.0156	0.0128	0.0442	0.0524	0.0084	0.0255	0.0485	0.0448
1983	0.0539	0.0312	0.0335	0.0059	0.0190	0.0414	0.0197	0.0141	0.0412	0.0417	0.0174	0.0285	0.0525	0.0502
1984	0.0564	0.0270	0.0349	0.0063	0.0256	0.0350	0.0215	0.0148	0.0443	0.0391	0.0199	0.0284	0.0589	0.0605
1985	0.0542	0.0263	0.0347	0.0067	0.0216	0.0366	0.0282	0.0153	0.0438	0.0399	0.0168	0.0328	0.0572	0.0541
1986	0.0474	0.0277	0.0318	0.0086	0.0264	0.0387	0.0307	0.0167	0.0395	0.0362	0.0268	0.0326	0.0449	0.0441
1987	0.0444	0.0351	0.0289	0.0094	0.0288	0.0429	0.0325	0.0187	0.0376	0.0416	0.0304	0.0353	0.0513	0.0498
1988	0.0493	0.0427	0.0333	0.0123	0.0400	0.0519	0.0423	0.0212	0.0421	0.0489	0.0291	0.0413	0.0549	0.0531
1989	0.0565	0.0440	0.0424	0.0162	0.0462	0.0582	0.0401	0.0241	0.0491	0.0592	0.0316	0.0461	0.0583	0.0529
1990	0.0576	0.0552	0.0544	0.0209	0.0555	0.0684	0.0360	0.0265	0.0501	0.0752	0.0340	0.0563	0.0606	0.0545
1991	0.0637	0.0586	0.0561	0.0295	0.0588	0.0697	0.0356	0.0320	0.0554	0.0798	0.0275	0.0546	0.0587	0.0514
1992	0.0640	0.0547	0.0443	0.0328	0.0563	0.0711	0.0376	0.0311	0.0569	0.0774	0.0156	0.0463	0.0661	0.0486
1993	0.0557	0.0471	0.0353	0.0393	0.0494	0.0607	0.0361	0.0312	0.0498	0.0683	0.0069	0.0421	0.0765	0.0489
1994	0.0559	0.0530	0.0395	0.0393	0.0503	0.0673	0.0309	0.0330	0.0504	0.0735	0.0141	0.0434	0.0783	0.0542
1995	0.0615	0.0642	0.0439	0.0405	0.0597	0.0711	0.0473	0.0363	0.0586	0.0752	0.0149	0.0499	0.0778	0.0577
1996	0.0602	0.0596	0.0420	0.0422	0.0571	0.0671	0.0413	0.0356	0.0602	0.0708	0.0218	0.0443	0.0655	0.0586
1997	0.0593	0.0497	0.0403	0.0390	0.0512	0.0641	0.0396	0.0351	0.0590	0.0699	0.0221	0.0406	0.0562	0.0615
1998	0.0539	0.0396	0.0380	0.0462	0.0510	0.0596	0.0309	0.0335	0.0545	0.0635	0.0191	0.0390	0.0531	0.0582
1999	0.0524	0.0449	0.0365	0.0451	0.0473	0.0617	0.0286	0.0361	0.0535	0.0642	0.0213	0.0400	0.0489	0.0662
2000	0.0605	0.0530	0.0447	0.0406	0.0450	0.0697	0.0337	0.0358	0.0623	0.0711	0.0299	0.0395	0.0511	0.0691
2001	0.0596	0.0508	0.0480	0.0448	0.0379	0.0696	0.0360	0.0380	0.0629	0.0719	0.0211	0.0417	0.0516	0.0615
2002	0.0578	0.0480	0.0431	0.0454	0.0352	0.0638	0.0332	0.0369	0.0617	0.0665	0.0145	0.0463	0.0519	0.0591

Table 6. Continued

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-bourg	Nether-lands	Portugal	Sweden	United Kingdom	United States
Land:														
1973	0.0061	0.0054	0.0139	0.0023	0.0044	0.0074	0.0017	0.0020	0.0033	0.0080	0.0005	0.0044	0.0050	0.0079
1974	0.0066	0.0114	0.0158	0.0017	0.0046	0.0115	0.0038	0.0033	0.0039	0.0137	0.0008	0.0048	0.0052	0.0071
1975	0.0041	0.0050	0.0099	0.0016	0.0040	0.0112	0.0026	0.0021	0.0016	0.0074	0.0008	0.0058	0.0029	0.0056
1976	0.0055	0.0075	0.0118	0.0015	0.0036	0.0086	0.0039	0.0022	0.0024	0.0061	0.0008	0.0051	0.0032	0.0054
1977	0.0090	0.0131	0.0178	0.0014	0.0036	0.0070	0.0050	0.0021	0.0037	0.0131	0.0009	0.0037	0.0028	0.0078
1978	0.0144	0.0258	0.0171	0.0015	0.0035	0.0061	0.0048	0.0023	0.0051	0.0180	0.0009	0.0024	0.0033	0.0119
1979	0.0182	0.0302	0.0240	0.0023	0.0038	0.0054	0.0042	0.0034	0.0072	0.0241	0.0006	0.0021	0.0065	0.0178
1980	0.0358	0.0303	0.0325	0.0055	0.0054	0.0085	0.0037	0.0042	0.0137	0.0290	0.0007	0.0045	0.0075	0.0263
1981	0.0542	0.0238	0.0559	0.0104	0.0091	0.0247	0.0071	0.0077	0.0237	0.0356	0.0010	0.0092	0.0086	0.0439
1982	0.0485	0.0226	0.0509	0.0122	0.0138	0.0350	0.0064	0.0068	0.0198	0.0321	0.0034	0.0118	0.0139	0.0399
1983	0.0385	0.0211	0.0420	0.0111	0.0150	0.0280	0.0110	0.0065	0.0135	0.0262	0.0097	0.0122	0.0157	0.0456
1984	0.0402	0.0141	0.0439	0.0090	0.0207	0.0196	0.0103	0.0054	0.0139	0.0305	0.0109	0.0117	0.0192	0.0552
1985	0.0352	0.0159	0.0408	0.0065	0.0145	0.0181	0.0171	0.0044	0.0145	0.0362	0.0070	0.0148	0.0145	0.0400
1986	0.0257	0.0162	0.0327	0.0069	0.0208	0.0192	0.0185	0.0050	0.0104	0.0373	0.0097	0.0133	0.0175	0.0225
1987	0.0225	0.0246	0.0259	0.0084	0.0250	0.0290	0.0182	0.0067	0.0111	0.0377	0.0119	0.0148	0.0197	0.0257
1988	0.0281	0.0332	0.0303	0.0125	0.0409	0.0384	0.0230	0.0095	0.0161	0.0474	0.0151	0.0187	0.0230	0.0269
1989	0.0368	0.0348	0.0414	0.0178	0.0498	0.0434	0.0237	0.0126	0.0262	0.0536	0.0179	0.0233	0.0249	0.0254
1990	0.0375	0.0497	0.0559	0.0209	0.0576	0.0566	0.0212	0.0148	0.0421	0.0536	0.0278	0.0339	0.0251	0.0270
1991	0.0425	0.0509	0.0573	0.0294	0.0543	0.0565	0.0193	0.0204	0.0459	0.0523	0.0255	0.0329	0.0215	0.0245
1992	0.0425	0.0395	0.0356	0.0296	0.0449	0.0537	0.0202	0.0173	0.0575	0.0496	0.0148	0.0247	0.0217	0.0221
1993	0.0296	0.0261	0.0221	0.0342	0.0363	0.0414	0.0176	0.0160	0.0344	0.0399	0.0128	0.0167	0.0298	0.0216
1994	0.0288	0.0337	0.0266	0.0342	0.0379	0.0457	0.0125	0.0175	0.0240	0.0389	0.0132	0.0231	0.0337	0.0266
1995	0.0364	0.0481	0.0320	0.0308	0.0489	0.0504	0.0300	0.0204	0.0330	0.0480	0.0275	0.0289	0.0438	0.0290
1996	0.0342	0.0422	0.0281	0.0299	0.0478	0.0451	0.0260	0.0192	0.0342	0.0453	0.0182	0.0235	0.0409	0.0302
1997	0.0328	0.0310	0.0276	0.0273	0.0482	0.0402	0.0265	0.0176	0.0315	0.0468	0.0180	0.0204	0.0273	0.0331
1998	0.0267	0.0178	0.0253	0.0380	0.0484	0.0355	0.0152	0.0170	0.0239	0.0466	0.0196	0.0208	0.0218	0.0274
1999	0.0259	0.0263	0.0240	0.0337	0.0474	0.0383	0.0110	0.0201	0.0310	0.0339	0.0302	0.0236	0.0168	0.0357
2000	0.0362	0.0380	0.0333	0.0254	0.0403	0.0491	0.0189	0.0189	0.0535	0.0357	0.0458	0.0230	0.0192	0.0370
2001	0.0336	0.0378	0.0374	0.0249	0.0319	0.0475	0.0210	0.0216	0.0499	0.0342	0.0474	0.0289	0.0170	0.0248
2002	0.0303	0.0327	0.0315	0.0234	0.0257	0.0404	0.0114	0.0186	0.0442	0.0364	0.0417	0.0350	0.0146	0.0209

Table 7. Translog price Indexes of capital input

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-bourg	Nether-lands	Portugal	Sweden	United Kingdom	United States
1973	0.2841	0.1613	0.4712	0.0566	0.0914	0.1742	0.0959	0.1199	0.1279	0.2507	0.0449	0.2042	0.1392	0.2744
1974	0.3162	0.2375	0.5304	0.0451	0.0987	0.2430	0.1607	0.1781	0.1499	0.3425	0.0555	0.2319	0.1598	0.2752
1975	0.2723	0.1922	0.4223	0.0439	0.0928	0.2497	0.1432	0.1492	0.1081	0.2679	0.0543	0.2622	0.1440	0.2736
1976	0.3078	0.2189	0.4749	0.0441	0.0912	0.2328	0.1882	0.1705	0.1414	0.2653	0.0646	0.2790	0.1683	0.2812
1977	0.3768	0.2646	0.6001	0.0431	0.0984	0.2390	0.2334	0.2014	0.1657	0.3709	0.0981	0.2902	0.1798	0.3336
1978	0.4701	0.3575	0.5845	0.0475	0.1055	0.2544	0.2438	0.2441	0.2044	0.4427	0.1197	0.3027	0.2004	0.4156
1979	0.5394	0.4015	0.7183	0.0664	0.1192	0.2614	0.2310	0.3331	0.2570	0.5337	0.1276	0.3248	0.2706	0.5281
1980	0.8263	0.4423	0.8798	0.1390	0.1553	0.3167	0.2421	0.2347	0.4246	0.6321	0.1602	0.4127	0.3031	0.6895
1981	1.1481	0.4817	1.3139	0.2503	0.2304	0.5277	0.3476	0.3466	0.6675	0.7714	0.2017	0.4933	0.3463	0.9980
1982	1.0977	0.5703	1.2461	0.2984	0.3186	0.7000	0.3553	0.3597	0.6086	0.7338	0.3230	0.5533	0.4453	0.9662
1983	0.9611	0.5547	1.0869	0.2852	0.3547	0.6630	0.4843	0.3821	0.4736	0.6273	0.6375	0.6146	0.4915	1.0809
1984	1.0024	0.5019	1.1313	0.2472	0.4636	0.5511	0.4960	0.3825	0.4963	0.6565	0.7529	0.6226	0.5610	1.2679
1985	0.9331	0.5074	1.0926	0.2017	0.3731	0.5629	0.6862	0.3832	0.5047	0.7088	0.6539	0.6926	0.4934	1.0343
1986	0.7745	0.5297	0.9567	0.2275	0.4798	0.5937	0.7303	0.4165	0.4113	0.7059	0.9830	0.7063	0.4958	0.7485
1987	0.7188	0.6366	0.8394	0.2663	0.5483	0.6833	0.7522	0.4753	0.4185	0.7437	1.1142	0.7487	0.5592	0.8188
1988	0.8221	0.7466	0.9414	0.3764	0.8059	0.8233	0.9276	0.5593	0.5387	0.8732	1.1264	0.8307	0.6402	0.8558
1989	0.9801	0.7688	1.1829	0.5216	0.9540	0.9122	0.9343	0.6566	0.7715	0.9911	1.1853	0.8955	0.6807	0.8452
1990	1.0013	0.9270	1.4885	0.6284	1.0973	1.0852	0.8408	0.7374	1.0959	1.0861	1.3116	1.0513	0.7000	0.8823
1991	1.1080	0.9794	1.5356	0.8768	1.0836	1.1021	0.8046	0.9072	1.1961	1.1040	1.1055	1.0690	0.6524	0.8392
1992	1.1117	0.9164	1.1256	0.9100	0.9396	1.0849	0.8471	0.8569	1.4360	1.0690	0.6765	1.0022	0.7001	0.8012
1993	0.9028	0.8109	0.8526	1.0582	0.7881	0.9176	0.7970	0.8472	0.9481	0.9336	0.3897	0.9678	0.8641	0.7984
1994	0.8985	0.8954	0.9544	1.0617	0.8214	1.0005	0.6639	0.8986	0.7440	0.9561	0.6528	0.9676	0.9296	0.9073
1995	1.0346	1.0522	1.0729	1.0026	1.0155	1.0628	1.1251	0.9940	0.9629	1.0441	0.7911	1.0723	1.0750	0.9707
1996	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1997	0.9868	0.8700	0.9720	0.9179	0.9864	0.9446	0.9914	0.9827	0.9391	1.0334	1.0394	0.9525	0.7762	1.0617
1998	0.8789	0.7306	0.9232	1.1995	0.9955	0.8809	0.7213	0.9659	0.7642	1.0046	0.9629	0.9374	0.6840	0.9511
1999	0.8647	0.8060	0.8965	1.0993	0.9769	0.9168	0.6326	1.0457	0.9079	0.9175	1.1248	0.9616	0.5966	1.1210
2000	1.0501	0.9249	1.1073	0.8892	0.9029	1.0417	0.8204	1.0240	1.4061	0.9863	1.5832	0.9446	0.6308	1.1542
2001	1.0096	0.9003	1.2018	0.9133	0.7737	1.0299	0.8799	1.0972	1.3319	0.9682	1.2541	0.9971	0.5923	0.9231
2002	0.9550	0.8544	1.0735	0.8905	0.6855	0.9359	0.6931	1.0358	1.2085	0.9532	0.9640	1.1204	0.5589	0.8528

Table 8. Capital input (millions of 1996 national currencies except Italy billions of national currencies)_

Year	Belgium	Denmark	Germany 1/	Greece	Spain	France	Ireland	Italy	Luxem-bourg	Nether-lands	Portugal	Sweden	United Kingdom	United States
1973	41714	9896	30433	702670	1494866	71610	971	17496	14220	7211	32614	9704	6062	50162
1974	43537	10827	30684	707102	1508665	74704	1014	17933	14321	7531	34996	9579	6121	51455
1975	45395	11547	30728	716292	1502287	77379	1011	18337	14510	7851	37786	9542	6143	52753
1976	45803	12209	30811	733325	1506730	79959	1028	18716	14575	8057	41134	9658	6104	53556
1977	46482	12905	30925	738692	1513259	82643	1062	19228	14580	8260	44281	9821	6074	54654
1978	47308	13460	31075	753054	1528441	84425	1104	19749	14355	8596	47848	9823	6065	55478
1979	48478	14058	30555	754685	1553177	86273	1148	20163	14407	8974	50645	9736	6069	56454
1980	48820	14657	30723	762165	1580545	87660	1195	20811	14420	9359	53998	9661	6068	57328
1981	48599	14791	30746	764174	1621616	88604	1221	21686	14252	9559	57987	9437	6005	57129
1982	48282	14677	30606	764601	1638693	89431	1247	22280	14153	9708	61044	9245	5976	56507
1983	48130	14588	30464	767555	1654008	90172	1257	22427	14274	9877	62064	9117	5990	55344
1984	47755	14540	30448	769364	1671164	90444	1259	22615	14335	10120	62430	9009	6049	54218
1985	47485	14576	30342	778921	1680771	91009	1261	22947	14238	10230	62398	8968	6116	53054
1986	47119	14776	30232	783722	1681309	90738	1261	23017	14196	10282	62150	8815	6138	51332
1987	47028	14962	30072	781188	1687012	90067	1281	23034	13979	10332	63806	8612	6144	49457
1988	46978	14978	29900	776178	1691911	89526	1267	22995	13839	10371	65988	8445	6155	48137
1989	46787	14859	29810	775350	1684719	90796	1250	22665	13807	10396	69049	8344	6148	46936
1990	46587	14902	29809	772324	1671050	91406	1244	22332	13883	10484	71703	8301	6146	46012
1991	46478	14924	31602	767286	1646877	91690	1249	22230	13835	10577	74115	8188	6132	45276
1992	45934	14794	31540	769638	1634672	91551	1248	22181	13871	10673	76789	7963	6095	44419
1993	46091	14560	31548	769107	1609762	90577	1249	22053	13949	10780	78626	7697	6095	43561
1994	45640	14172	31340	768333	1586470	89764	1240	21875	13914	10730	80648	7449	6107	42916
1995	44928	14049	31078	767560	1559262	89359	1247	21833	13895	10699	82101	7367	6125	42358
1996	44500	14003	30852	766324	1543253	89316	1252	21855	13755	10414	84117	7308	6178	41786
1997	44099	13832	30823	758075	1550743	90296	1274	21907	13525	10484	86349	7185	6206	41416
1998	43915	13904	30621	739978	1545840	90838	1276	21985	13474	10462	88905	7177	6185	41179
1999	43764	13879	30263	731179	1533780	92714	1282	22191	13447	10534	90339	7152	6098	41032
2000	43773	13823	30115	719660	1519797	93476	1284	22319	13408	10607	92550	7183	5959	40763
2001	43788	13860	30074	707387	1511044	94426	1283	22375	13289	10659	94188	7223	5907	40513
2002	43929	13992	29890	694561	1498547	95348	1281	22483	13254	10787	95384	7253	5821	40407

1/ Includes former East Germany beginning in 1991.

Table 9. Purchasing power parities for capital input (national currencies per U.S. dollar)

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-bourg	Nether-lands	Portugal	Sweden	United Kingdom	United States
1973	16.692	1.509	1.315	29.575	25.815	1.357	0.100	264.825	11.188	1.281	4.383	1.499	0.143	0.274
1974	18.577	2.221	1.480	23.572	27.880	1.894	0.168	393.460	13.107	1.751	5.414	1.702	0.164	0.275
1975	15.995	1.797	1.179	22.934	26.225	1.945	0.150	329.593	9.452	1.369	5.302	1.925	0.148	0.274
1976	18.082	2.047	1.325	23.013	25.775	1.814	0.197	376.664	12.365	1.356	6.305	2.048	0.173	0.281
1977	22.135	2.474	1.675	22.488	27.789	1.862	0.244	445.004	14.486	1.896	9.574	2.130	0.185	0.334
1978	27.617	3.343	1.631	24.809	29.819	1.982	0.255	539.349	17.872	2.263	11.676	2.222	0.206	0.416
1979	31.687	3.754	2.005	34.690	33.669	2.036	0.241	735.973	22.478	2.728	12.446	2.385	0.278	0.528
1980	48.543	4.136	2.456	72.613	43.870	2.467	0.253	518.489	37.134	3.231	15.635	3.030	0.311	0.689
1981	67.451	4.504	3.667	130.717	65.106	4.111	0.363	765.883	58.373	3.944	19.684	3.621	0.356	0.998
1982	64.487	5.333	3.478	155.866	90.023	5.454	0.371	794.888	53.222	3.751	31.521	4.062	0.458	0.966
1983	56.461	5.186	3.034	148.958	100.217	5.165	0.506	844.294	41.421	3.207	62.202	4.512	0.505	1.081
1984	58.888	4.693	3.158	129.128	130.968	4.294	0.518	845.237	43.398	3.356	73.466	4.571	0.576	1.268
1985	54.821	4.745	3.049	105.360	105.398	4.386	0.717	846.661	44.137	3.623	63.811	5.084	0.507	1.034
1986	45.499	4.953	2.670	118.844	135.553	4.625	0.763	920.251	35.965	3.608	95.922	5.185	0.509	0.748
1987	42.228	5.953	2.343	139.095	154.906	5.324	0.786	1050.214	36.602	3.802	108.727	5.496	0.574	0.819
1988	48.299	6.982	2.628	196.580	227.690	6.414	0.969	1235.721	47.111	4.464	109.913	6.098	0.658	0.856
1989	57.578	7.189	3.302	272.450	269.522	7.107	0.976	1450.840	67.473	5.066	115.665	6.574	0.699	0.845
1990	58.825	8.668	4.155	328.231	310.019	8.455	0.878	1629.323	95.837	5.552	127.983	7.717	0.719	0.882
1991	65.094	9.158	4.286	457.984	306.156	8.587	0.841	2004.521	104.603	5.644	107.869	7.847	0.670	0.839
1992	65.310	8.569	3.142	475.328	265.447	8.453	0.885	1893.290	125.577	5.465	66.015	7.357	0.719	0.801
1993	53.040	7.582	2.380	552.735	222.644	7.149	0.833	1871.893	82.911	4.772	38.029	7.105	0.888	0.798
1994	52.784	8.373	2.664	554.535	232.056	7.795	0.694	1985.516	65.062	4.888	63.701	7.103	0.955	0.907
1995	60.781	9.839	2.995	523.660	286.902	8.281	1.175	2196.352	84.209	5.338	77.198	7.871	1.105	0.971
1996	58.748	9.351	2.791	522.314	282.526	7.791	1.045	2209.571	87.452	5.112	97.579	7.341	1.027	1.000
1997	57.971	8.135	2.713	479.415	278.694	7.360	1.036	2171.427	82.126	5.283	101.426	6.992	0.797	1.062
1998	51.633	6.831	2.577	626.490	281.241	6.863	0.754	2134.224	66.828	5.136	93.960	6.881	0.703	0.951
1999	50.797	7.537	2.502	574.190	276.008	7.143	0.661	2310.593	79.399	4.690	109.760	7.059	0.613	1.121
2000	61.692	8.649	3.091	464.421	255.105	8.116	0.857	2262.516	122.969	5.042	154.485	6.934	0.648	1.154
2001	59.313	8.418	3.354	477.028	218.581	8.024	0.919	2424.406	116.475	4.950	122.378	7.319	0.609	0.923
2002	56.106	7.989	2.996	465.128	193.666	7.292	0.724	2288.672	105.683	4.873	94.064	8.225	0.574	0.853

Table 10. Prices of capital input relative to U.S. in 1996

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-bourg	Nether-lands	Portugal	Sweden	United Kingdom	United States
1973	0.4285	0.2496	0.4923	0.9983	0.4431	0.3047	0.2456	0.4548	0.2872	0.4584	0.1788	0.3436	0.3506	0.2744
1974	0.4768	0.3645	0.5723	0.7857	0.4833	0.3937	0.3927	0.6043	0.3364	0.6512	0.2131	0.3834	0.3840	0.2752
1975	0.4347	0.3127	0.4790	0.7156	0.4568	0.4537	0.3324	0.5046	0.2569	0.5414	0.2075	0.4634	0.3286	0.2736
1976	0.4684	0.3385	0.5264	0.6302	0.3853	0.3807	0.3549	0.4525	0.3203	0.5130	0.2086	0.4701	0.3122	0.2812
1977	0.6176	0.4119	0.7211	0.6104	0.3658	0.3788	0.4255	0.5041	0.4042	0.7727	0.2501	0.4751	0.3225	0.3336
1978	0.8774	0.6062	0.8123	0.6752	0.3889	0.4395	0.4889	0.6352	0.5678	1.0461	0.2657	0.4916	0.3953	0.4156
1979	1.0806	0.7136	1.0937	0.9366	0.5016	0.4787	0.4940	0.8858	0.7665	1.3601	0.2544	0.5561	0.5899	0.5281
1980	1.6598	0.7339	1.3509	1.7038	0.6118	0.5838	0.5203	0.6055	1.2697	1.6252	0.3123	0.7161	0.7241	0.6895
1981	1.8156	0.6321	1.6223	2.3592	0.7052	0.7565	0.5865	0.6734	1.5712	1.5804	0.3198	0.7149	0.7211	0.9980
1982	1.4103	0.6395	1.4324	2.3332	0.8194	0.8294	0.5275	0.5873	1.1640	1.4049	0.3966	0.6460	0.8005	0.9662
1983	1.1040	0.5668	1.1876	1.6915	0.6987	0.6777	0.6313	0.5556	0.8099	1.1236	0.5615	0.5881	0.7655	1.0809
1984	1.0188	0.4529	1.1087	1.1456	0.8147	0.4911	0.5626	0.4808	0.7508	1.0460	0.5019	0.5522	0.7698	1.2679
1985	0.9232	0.4474	1.0357	0.7628	0.6198	0.4880	0.7638	0.4434	0.7433	1.0909	0.3745	0.5907	0.6568	1.0343
1986	1.0184	0.6117	1.2298	0.8490	0.9679	0.6679	1.0229	0.6170	0.8050	1.4728	0.6412	0.7273	0.7471	0.7485
1987	1.1306	0.8694	1.3033	1.0269	1.2545	0.8857	1.1695	0.8100	0.9800	1.8774	0.7711	0.8659	0.9417	0.8188
1988	1.3136	1.0361	1.4962	1.3849	1.9546	1.0769	1.4783	0.9493	1.2813	2.2590	0.7622	0.9939	1.1716	0.8558
1989	1.4623	0.9828	1.7569	1.6769	2.2776	1.1148	1.3853	1.0580	1.7136	2.3911	0.7348	1.0188	1.1467	0.8452
1990	1.7606	1.4008	2.5711	2.0704	3.0408	1.5528	1.4565	1.3600	2.8683	3.0504	0.8973	1.3033	1.2837	0.8823
1991	1.9065	1.4321	2.5842	2.5112	2.9475	1.5228	1.3472	1.6170	3.0636	3.0194	0.7460	1.2981	1.1862	0.8392
1992	2.0308	1.4187	2.0108	2.4902	2.5904	1.5963	1.5073	1.5353	3.9048	3.1064	0.4884	1.2624	1.2690	0.8012
1993	1.5343	1.1695	1.4391	2.4089	1.7488	1.2621	1.2209	1.1908	2.3984	2.5701	0.2364	0.9122	1.3332	0.7984
1994	1.5789	1.3172	1.6424	2.2866	1.7334	1.4053	1.0382	1.2319	1.9461	2.6867	0.3839	0.9207	1.4633	0.9073
1995	2.0608	1.7559	2.0896	2.2592	2.3010	1.6598	1.8841	1.3483	2.8551	3.3262	0.5148	1.1025	1.7431	0.9707
1996	1.8974	1.6123	1.8548	2.1689	2.2303	1.5230	1.6716	1.4323	2.8245	3.0326	0.6325	1.0943	1.6044	1.0000
1997	1.6199	1.2315	1.5645	1.7554	1.9030	1.2611	1.5712	1.2750	2.2949	2.7086	0.5784	0.9151	1.3062	1.0617
1998	1.4224	1.0194	1.4647	2.1207	1.8828	1.1636	1.0738	1.2291	1.8409	2.5897	0.5214	0.8652	1.1646	0.9511
1999	1.3414	1.0796	1.3628	1.8772	1.7670	1.1600	0.8951	1.2711	2.0966	2.2673	0.5832	0.8539	0.9917	1.1210
2000	1.4080	1.0686	1.4548	1.2694	1.4115	1.1391	1.0049	1.0758	2.8064	2.1083	0.7094	0.7557	0.9824	1.1542
2001	1.3156	1.0106	1.5345	1.2526	1.1754	1.0945	1.0452	1.1203	2.5835	2.0095	0.5462	0.7076	0.8763	0.9231
2002	1.3105	1.0129	1.4434	1.2862	1.0967	1.0474	0.8691	1.1137	2.4685	2.1059	0.4421	0.8459	0.8628	0.8528

Table 11. Capital input (millions of 1996 U.S. dollars)

Year	Belgium	Denmark	Germany 1/	Greece	Spain	France	Ireland	Italy	Luxem-bourg	Nether-lands	Portugal	Sweden	United Kingdom	United States
1973	710	1058	10902	1345	5291	9191	929	7918	163	1410	334	1322	5900	50162
1974	741	1158	10994	1354	5340	9588	971	8116	164	1473	359	1305	5957	51455
1975	773	1235	11016	1371	5317	9932	968	8299	166	1536	387	1300	5979	52753
1976	780	1306	11023	1404	5333	10263	984	8470	167	1576	422	1316	5941	53556
1977	791	1380	11087	1414	5356	10607	1017	8702	167	1616	454	1338	5912	54654
1978	805	1439	11136	1442	5410	10836	1057	8938	164	1682	490	1338	5903	55478
1979	825	1503	10946	1445	5497	11073	1099	9125	165	1756	519	1326	5907	56454
1980	831	1567	11006	1459	5594	11251	1144	9419	165	1831	553	1316	5906	57328
1981	827	1582	11012	1463	5740	11372	1169	9814	163	1870	594	1286	5844	57129
1982	822	1570	10965	1464	5800	11478	1194	10083	162	1899	626	1259	5817	56507
1983	819	1560	10916	1470	5854	11573	1203	10150	163	1932	636	1242	5830	55344
1984	813	1555	10914	1473	5915	11608	1205	10235	164	1980	640	1227	5888	54218
1985	808	1559	10874	1491	5949	11681	1207	10385	163	2001	639	1222	5953	53054
1986	802	1580	10827	1500	5951	11646	1207	10417	162	2011	637	1201	5974	51332
1987	801	1600	10767	1496	5971	11560	1226	10425	160	2021	654	1173	5980	49457
1988	800	1602	10719	1486	5989	11491	1212	10407	158	2029	676	1150	5991	48137
1989	796	1589	10676	1484	5963	11654	1196	10258	158	2034	708	1137	5984	46936
1990	793	1594	10678	1479	5915	11732	1191	10107	159	2051	735	1131	5982	46012
1991	791	1596	11321	1469	5829	11768	1195	10061	158	2069	760	1115	5969	45276
1992	782	1582	11304	1474	5786	11750	1195	10039	159	2088	787	1085	5932	44419
1993	785	1557	11312	1472	5698	11625	1196	9981	160	2109	806	1049	5932	43561
1994	777	1516	11231	1471	5615	11521	1187	9900	159	2099	826	1015	5944	42916
1995	765	1502	11131	1470	5519	11469	1194	9881	159	2093	841	1004	5962	42358
1996	757	1498	11046	1467	5462	11464	1199	9891	157	2037	862	995	6013	41786
1997	751	1479	11043	1451	5489	11589	1219	9914	155	2051	885	979	6040	41416
1998	748	1487	10979	1417	5472	11659	1221	9950	154	2046	911	978	6020	41179
1999	745	1484	10839	1400	5429	11900	1227	10043	154	2061	926	974	5936	41032
2000	745	1478	10792	1378	5379	11998	1229	10101	153	2075	948	978	5800	40763
2001	745	1482	10771	1354	5348	12119	1228	10127	152	2085	965	984	5750	40513
2002	748	1496	10703	1330	5304	12238	1226	10175	152	2110	978	988	5666	40407

1/ Includes former East Germany beginning in 1991.

Figure 1. Calculation of Integral Using Simpson's Approximation.

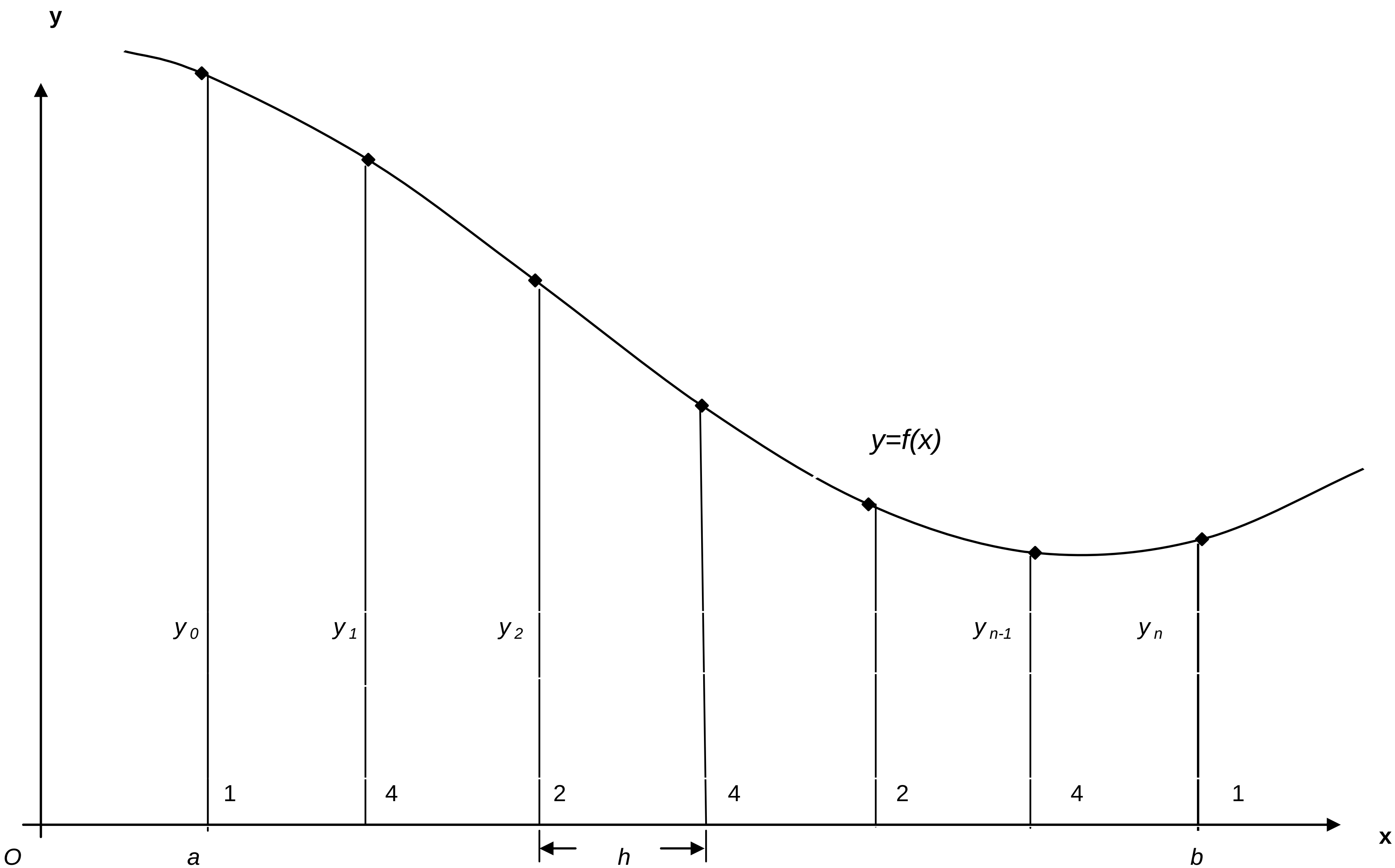

Figure 2. Level of Characteristics.