Comparisons of Real Values of Capital Input in OECD Agriculture, 1973-2011

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Abstract: This paper provides a farm sector comparison of real values of capital input for 17 OECD countries for the period 1973-2011. The starting point for construction of a measure of capital input is the measurement of capital stock. Estimates of depreciable capital input are derived by representing capital stock at each point of time as a weighted sum of past investments. The capital stocks of land are measured as implicit quantities derived from balance sheet data. We convert estimates of capital stock into estimates of capital service flows by means of capital rental prices. 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. Finally, comparisons of relative levels of capital input across countries require data on relative prices of capital input. We obtain relative prices of capital input via relative investment goods prices, taking into account the flow of capital input per unit of capital stock in each country.

Key Words: Capital stock; capital rental prices; purchasing power parities; real capital input

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1. Introduction

Productivity gains in agriculture over the past half century have enabled growth in global output to outpace population growth with only modest increases in total factor input. However, the rates of growth of productivity have been very uneven across countries, resulting in large differences in relative levels of productivity (see Ball et al., 2001, 2010; Fuglie, 2012; Alston and Pardey, 2014; Gollin, Lagakos, and Waugh, 2014; Herrendorf and Schoellman, 2015).

Several recent studies point to differences in relative capital intensities as the proximate cause of the uneven performance (see Dollar and Wolff, 1994; Ball et al., 2001; Ball, Hallahan, and Nehring, 2004; Ball, San Juan Mesonada, and Ulloa, 2014).This is referred to as the 'embodiment effect' since it implies that technological innovations are embodied in capital. Our objective in this paper is to provide estimates of real capital input (including land) in agriculture in 17 OECD countries for the period 1973-2011.[1] In a subsequent paper, we integrate estimates of real capital input into the production accounts for agriculture, including estimates of real output and real factor input. The accounts underpin estimates of relative levels of technology in agriculture, with a focus on capital accumulation as a source of (conditional) convergence.

Construction of a measure of capital input begins with estimating the capital stock for each asset type in each country. For depreciable assets, estimates of capital input are derived by representing capital stock at each point in time as a weighted sum of past investments.[2] The

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

[2] Depreciable assets include transportation equipment, other machinery, and non-residential

weights correspond to relative efficiencies of capital goods of different ages, so that the weighted components of capital stock have the same efficiency.

This is an application of the widely used perpetual inventory method. A problem relates to the assumptions required by the perpetual inventory method or, more specifically, the assumption of fixed asset lives. In fact, there is wide variation in the service lives of capital assets, even among assets of the same type. Little information is available, however, on the actual service lives of assets. Thus, we adopt a set of assumptions required to model variation in service lives and, once these service lives are determined, the actual rate of physical depreciation or decline in efficiency.

To estimate the stock of land in each country, we compile data on land area and average value (excluding buildings) per hectare. The observations in each country are differentiated by region and by land type. Land values per hectare are used to aggregate the different land categories into an estimate of land stock.

We convert estimates of capital stock into estimates of capital service flows by means of capital rental prices. Implicit rental prices for each asset type are based on the correspondence between the purchase price of the asset and the discounted value of future service flows derived from that asset.

Comparisons of real values of capital input across among require data on relative prices of capital input. We obtain relative prices of capital input via relative investment goods prices, taking into account the flow of capital services per unit of capital stock in each country.

Spatial differences in land characteristics (or quality) prevent the direct comparison of observed prices. Therefore, we construct indexes of relative prices of land in each country using

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structures.

hedonic methods.

2. Model

In this section, we construct estimates of the capital stock and rental price for each asset type in each country. For depreciable assets, the perpetual inventory method is used to develop capital stocks from data on investment in constant prices.[3] A specific problem associated with the perpetual inventory method is the assumption of fixed asset lives. In fact, there is wide variation in asset lives, even among assets of the same type. Little information is available, however, on the actual service lives of assets. Thus, we adopt a set of assumptions that allow us to model variation in service lives. The stock of land in each country is measured as an implicit quantity derived from balance sheet data. Capital rental prices for each asset type 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 all past investments, each weighted by its relative efficiency, say d_τ:

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

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

[3] Data on investment for member states of the European Union are from Beutel (1997). More recently, these data are from the Economic Accounts for Agriculture (Eurostat). For Australia, data are from the Australian Bureau of Statistics. Statistics Canada provided data for Canada, while data for the United States were provided by the US Department of Agriculture's Economic Research Service.

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

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

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

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

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

where the weights are the mortality rates.

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

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

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:

(7)
$$d_\tau = (L - \tau)/(L - \beta\tau), 0 \leq \tau \leq L$$
$$d_\tau = 0, \tau \geq L.$$

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 of β less than zero, *d* approaches zero at a decreasing rate. Finally, if β equals zero the function corresponds to the formula for straight-line depreciation.

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 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 deteriorate rapidly. The decay parameter for machinery and equipment assumes that the decline in efficiency is more uniformly distributed over the asset's service life.

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 different types of capital goods. Each of the different types is a homogeneous group of assets in which the actual service life L is a random variable reflecting usage, maintenance and repair patterns, or simply chance variation. For each type of capital good there exists some mean service life $\overline{L}$ around which there is a distribution of the actual service lives of the assets in the group. In order to determine the capital available for production, the actual service lives and the relative frequency of assets with these service lives must be determined. We assume that this distribution may be accurately depicted by the standard normal distribution.

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. This adjustment involves truncation of the normal at some point before and after $\overline{L}$. The values of the normal are then adjusted upward within the allowed range of service lives.

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 occurrence of a service life L is known, the efficiency function for that particular service life is calculated using the assumed value of β. This process is repeated for all possible service lives. An aggregate efficiency function is then constructed as a weighted sum of the individual efficiency functions using as weights the frequency of occurrence. This function not only reflects changes in efficiency but also the discard distribution around the mean service life of the asset.

2.2 Land

To obtain the stock of land in each country, we first construct price indexes of land in agriculture. Observations on land in each country are differentiated by region and by land type.[4] The stock of land is then constructed implicitly as the ratio of the value land in agriculture to the corresponding price index.

2.3 Capital Rental Prices

An important innovation in measuring capital input 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 remaining task in this section is to generalize the representation of the rental price to allow for any pattern of capacity depreciation.

To accomplish this task, we draw on the literature on investment demand (see Arrow, 1964; Coen, 1975; Penson, Hughes, and Nelson, 1977; Romain, Penson, and Lambert, 1987). We assume that firms buy and sell assets so as to maximize the present value of the firm. Let w_K

[4] We compile annual data on land area and average value per hectare for 3,582 states or regions across the 17 countries.

denote the price the firm must pay for a new unit of capital, *p* the price the firm receives for each unit of output, and *r* the real discount rate. An increase in the capital stock *K* by one unit will increase output in each period by $\partial y/\partial K$, the marginal product of capital. Gross revenue in each period will rise by $p(\partial y/\partial K)$, but net revenue will rise by only $p(\partial y/\partial K) - w(\partial R_t/\partial K)$, where $\partial R_t/\partial K$ is the increase in replacement in period *t* required to maintain the capital stock at the new level. Firms should add to their capital stock if 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:

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

To maximize net present value, firms will continue to add to capital stock until this equation holds as an equality. This requires that:[5]

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

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, multiplied by the discount rate.

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[5] 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 (8) and rearranging terms yields expression (9).

Expression (9) can be simplified as follows. Let F denote the present value of the stream of capacity depreciation on one unit of capital according to the mortality distribution m; that is:

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

It can be shown that:

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

so that

(12) $$c = \frac{r \, w_K}{(1 - F)} .$$ [6]

The real rate of return r in equation (12) is calculated as the nominal yield on government bonds, less the rate of inflation as measured by the implicit deflator for gross domestic product. An ex ante rate is obtained by expressing inflation as an ARIMA process.[7] Implicit rental prices c are then calculated for each asset type in each country using the expected real rate of return.[8]

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[6] 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

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

which is the expression for the rental price commonly found in the literature.

[7] Price inflation is 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.

[8] A more common approach to measuring the rental price of capital is to use an ex post rate of return (see Jorgenson and Griliches, 1967; Christensen and Jorgenson, 1969; Jorgenson, Gollop, and Fraumeni, 1987). This unknown rate of return can be found by using the condition that the sum of returns across assets equals observed total profit (alternatively, gross operating surplus). However, many have expressed concern with the ex post approach (see Schreyer, Bignon, and

3. Real Capital Input

In the previous section, we outlined the development of data on capital stocks and rental prices of capital services. Estimates of capital stock by asset type in each of the 17 OECD countries are reported in Table 1. The corresponding capital rental prices appear in Table 2. These data are the basis for our estimates of real capital input across countries.

In Table 3, we report price indexes of capital input in each country formed by aggregating over the various asset types using cost-share weights based on asset-specific rental prices. The quantities of capital input in each country, found in Table 4, are formed implicitly by taking the ratio of the value of capital services in each country to the corresponding price index.

Comparisons of real values of capital input among countries require data on the relative prices of capital input. A price index that converts the ratio of the nominal values of capital service flows between two countries into an index of real capital input is referred to in the literature 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 (depreciable) capital goods separately for all 17 countries, we assume that the relative efficiency of new capital goods is the same in

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Dupont, 2003; Schreyer, 2004). They note that investment decisions must be made in advance of having all the relevant information. Firms employ some notion of the required rate of return in deciding how much to invest, and this required rate may differ from the realized rate. Moreover, they must base their decisions on expected, not actual, capital gains and losses. Using the ex post measure would imply either that all expectations are realized or that the quantities of capital can be instantaneously adjusted to the desired level after all uncertainties have been resolved. Neither assumption appears plausible. It is for this reason that we adopt an ex ante approach to the measurement of user cost.

each country. Therefore, the appropriate purchasing power parity for new capital goods is the purchasing power parity for the corresponding component of investment goods output (World Bank, 2008). 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 parities for capital goods for any two countries by the ratio of the prices of capital input for the two countries.

Estimating purchasing power parities for land input proves more difficult. Spatial differences in land characteristics (or quality) prevent the direct comparison of observed prices. Land in agricultural production is heterogeneous in terms of soil type and associated soil characteristics. Failure to account for these differences would lead to biased estimates of relative land input. Therefore, we construct indexes of relative prices of land using hedonic methods.

A hedonic price function expresses the price of a good or service as a function of the quantities of the characteristics it embodies. Thus, the hedonic price function for land 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 variables to be defined.

Sanchez et al. (2003) introduced a soil taxonomy that could be used to identify attributes relevant for crop production. A complete list of attributes, along with definitions, is provided in Table 5, while Figure 1 depicts their levels.[9] The attributes most common in major agricultural areas in the European countries and Australia are loamy topsoil and moisture stress. These attributes are also important in the United States, with moisture stress dominating in the Northern

[9] Sanchez et al. (2003) provide a global assessment of land resources. Using the Sanchez et al. database, we apply GIS techniques to overlay state and regional boundaries. This overlay gives us the proportion of the land area in each region that exhibits a particular attribute.

and Southern Plains, as well as the Pacific region. Soil acidity (i.e., aluminum toxicity) is important in the Southern and Eastern Mountain regions. In Canada, loamy top soil is the most prevalent soil type.

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. We also include the interaction between moisture stress and irrigation in the hedonic regression.

In addition to environmental attributes, we include a ‘population accessibility’ score for each state or region in each country. This index is 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 the distance from that population. The index increases as population increases and/or distance from the population center decreases.

Other variables (denoted by D) are included in the hedonic regression, 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 attributes, the part of the price difference not accounted for by the included attributes 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:

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

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

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

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.

Ordinarily, estimating a Box-Cox model is straightforward. However, the fact that our model contains dichotomous variables with values equal to zero at some point(s) makes for a more difficult application of this procedure. Since the Box-Cox transformation involves logarithms, and the logarithm of zero is not defined, one cannot simply fit the Box-Cox model to the data. In response to this problem, we do not transform those quality variables with values of zero.

Several methods have been used to calculate price indexes adjusted for quality using hedonic functions, including characteristics prices and dummy variable techniques. The latter is used in this study because it is simpler and because Triplett (1989) has provided extensive evidence of the robustness of the hedonic price indexes to the method of calculation. Using the dummy variable approach, quality-adjusted price indexes are calculated directly from the coefficients on the country dummy variables *D* in the hedonic regression. [10]

The regression results are reported in Table 6. Continuous variables include clayey topsoil, loamy topsoil, sandy topsoil, moisture stress, irrigation, and population accessibility. However, because of the extraordinary heterogeneity of the soils across States and regions, a number of attributes are included as dummy variables. These include aluminum toxicity, salinity, aridic or torric soils, waterlogging, high phosphorus fixation, alkalinity, cryic and frigid, permafrost, cracking clays, volcanic soils, high organic content, and rock. In each case, the variable takes on a value of one if the level of the attribute exceeds a threshold value, defined as the mean level over all observations, and zero otherwise. Referring to Table 6, we find that the price of land is positively correlated with loamy topsoil, sandy topsoil, irrigation, and population accessibility, as expected. The coefficient on the interaction term between irrigation and moisture stress is also positive and significant. Moisture stress has a negative and significant impact on land prices, as do aridic or torric soils. But waterlogging (i.e., poorly drained soils) is positively correlated with the price of land, which is not entirely intuitive.

Typical of poorly drained soils is a clayey subsoil that has sufficient anion exchange capacity to hold nitrogen against leaching. Another positive consequence of subsoil anion exchange capacity is the ability of the soil to hold some anions that can turn into pollutants if leached, including phosphates. When combined with management practices such as tiling these soils are highly productive.

We report purchasing power parities for aggregate capital input in Table 7.[11] These are

[10] We estimate equation (13) using the logarithm of prices (i.e., $\lambda_0 = 0$). Therefore, the quality-adjusted price index for land for country *i* relative to the United States is given by $e^{(D_i - D_{US})}$.

[11] We have constructed translog indexes of relative prices of capital input for the 17 countries for

relative prices of capital input expressed in terms of national currencies per dollar. We translate the purchasing power parities into relative prices in dollars by dividing by the exchange rate. This allows us to decompose the nominal value of capital service flows in each country into price and quantity components. We report indexes of relative prices of capital input in Table 8, while Table 9 provides real values of capital services in each country.

3.1 Relative Prices of Capital Input

In Figure 2, we plot the price of capital input in each country relative to that in the United States. We have expressed these prices in logarithmic form so that a positive difference implies that the price of capital input in the comparison country is above the United States price, while a negative difference implies a higher price in the United States.

Initially, the cost of capital in a number of countries was below that in the United States but rose to levels well above the United States level by the middle 1970s. We attribute this to two related developments, high rates of inflation in the United States and a weakening dollar (see Feldstein, 1978; 1980). The high rates of inflation actually originated in the monetary and fiscal policies of the late 1960s.

During the late 1960s, increases in government spending outpaced revenue growth, resulting in large deficits. Given the fiscal stimulus, the Federal Reserve could not hope to keep interest rates down and, simultaneously, restrain money growth and thus avoid accelerating inflation.

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the base year, 2005 (see Caves, Christensen, and Diewert, 1982). We have also calculated price indexes of capital input in each country for the period 1973–2011 (see Table 3). The indexes of capital input prices in each country relative to those in the United States for each year are obtained by linking these time-series price indexes with the indexes of relative prices for the base period.

The Federal Reserve had been conducting monetary policy so as to stabilize interest rates. But in order to stabilize interest rates when there was a large deficit, the central bank had to expand the money supply. The Federal Reserve provided sufficient money and credit to finance both the budget deficit and the demand for private credit without raising interest rates unduly. The result of monetary expansion, however, was high rates of inflation.

The second related development was the falling value of the dollar on foreign exchange markets. The Bretton Woods monetary agreement to stabilize international currencies relied on the gold standard for enforcement. When the United States adopted a policy of monetary expansion and resulting inflation, it could no longer honor the agreement. The United States abrogated the Bretton Woods agreement and moved to flexible, and then floating, exchange rates. As a result, the dollar lost roughly a third of its value from 1970 to 1979 (Federal Reserve Board). Relative prices of capital reached a (temporary) peak in that year.

The situation changed in the early 1980s when the Federal Reserve Board changed course on monetary policy, targeting the money supply to allow interest rates to rise. And rise they did. High interest rates caused the value of the dollar to rise some 60 percent on foreign exchange markets between 1979 and 1985. By 1985, prices of capital, denominated in dollars, had fallen to their lowest levels relative to the United States.

Relative prices increased after 1985, a consequence of a weakening dollar and declining capital costs in the United States, reaching a peak in the early 1990s. But the subsequent strength of the dollar resulted in a decline in relative prices. By 2001, prices of capital input were again below the United States level. A weaker dollar after 2001 produced yet another break in trend as relative prices moved higher. The financial crisis of 2008 and the accompanying spike in interest rates pushed relative prices of capital input in Ireland and Portugal to record levels.

3.2 Levels of Real Capital Input

Relative levels of capital input are shown in Figure 3. Fifteen of the sixteen countries in our sample had higher levels of capital input relative to the United States in 2011 than they had at the beginning of the period in 1973. The largest increase in capital input was achieved by the Netherlands, with a doubling of capital input relative to the United States. Australia registered similar gains. Only Sweden saw the relative level of capital input decline over the 1973-2011 period.

More interesting, however, are the patterns of growth in capital input over sub-periods. All 17 countries increased absolute levels of capital input between 1973 and 1979. As noted above, the 1970s were characterized by high rates of inflation. Monetary restraint was not sufficient to cause interest rates to rise as fast as the rate of inflation. As a result, real interest rates fell sharply. For a time in the middle 1970s, real rates were actually negative.

Contributing to the already high rates of inflation was the spike in energy prices following the 1973 oil embargo. Moreover, the recycling of 'petrodollars' through developing countries fueled rapid growth in demand for agricultural exports. Finally, the sharp and unexpected rise in energy prices may have accelerated the rate of obsolescence of the stock of physical capital (see Baily, 1981; Ball, Schimmelpfennig, and Wang, 2013). These developments provided incentive for new capital expenditures, both to replace losses in the productive capacity of existing capital assets and to expand productive capacity.

The conditions that led to expansion during the 1970s came to an end in the early 1980s, as interest rates soared and the global economy went into recession. Growth in capital input slowed dramatically over the next two decades. In fact, 12 of the 17 countries actually reduced absolute levels of capital input. By the early 2000s, the level of capital input in United States agriculture had fallen by a third. Growth in capital input in the United States resumed during the 2000s. Still, the European countries, Canada and Australia posted gains in relative levels of capital input between 1979 and 2011.

4. Summary and Conclusions

This paper provides estimates of relative levels of capital input in agriculture for 17 OECD countries for the period 1973-2011. A measure of capital input is necessary for a description of technology. In a subsequent paper, we integrate these estimates into the production accounts for agriculture, including estimates of real output and real factor input. The accounts underpin estimates of relative levels of technology in agriculture, with a focus on capital accumulation as a source of (conditional) convergence.

Construction of a measure of capital input begins with estimating the capital stock for each asset type in each country. For depreciable assets, estimates of capital input are derived by representing capital stock at each point in time as a weighted sum of past investments. The weights correspond to relative efficiencies of capital goods of different ages, so that the weighted components of capital stock have the same efficiency.

A problem associated with this approach, the perpetual inventory method, is the assumption of fixed asset lives. In fact, there is wide variation in the service lives of capital assets, even among assets of the same type. Yet little information is available on the actual service lives of assets. Thus, we adopt a set of assumptions required to model variation in service lives and, once these service lives are determined, the decline in efficiency.

To estimate the stock of land in each country, we compile annual data on land area and average value (excluding buildings) per hectare. The observations in each country are differentiated by region and by land type. Land values per hectare are used to aggregate the different land categories into an estimate of land stock.

We convert estimates of capital stock into estimates of service flows by means of capital rental prices. Implicit rental prices for each asset type are based on the correspondence between the purchase price of the asset and discounted value of future service flows derived from that asset.

A comparison of relative levels of capital input across countries requires data on relative prices of capital input. A price index that converts the ratio of the nominal values of capital service flows between two countries into an index of 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 seventeen countries, we assume that the relative efficiency of new capital goods is the same in each country. Therefore, the appropriate purchasing power parity for new capital goods is the purchasing power parity for the corresponding component of investment goods output. 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 parities for capital goods for any two countries by the ratio of the prices of capital input for the two countries. The resulting price index represents the purchasing power parity for capital input.

Spatial differences in land quality prevent the direct comparison of observed prices. Therefore, we estimate relative prices of land in each country using hedonic methods.

The purchasing power parities are relative prices of capital input expressed in terms of national currencies per dollar. We divide the relative prices of capital input by the exchange rate to translate the purchasing power parities into relative prices in dollars. This allows us to decompose nominal values of capital service flows into price and quantity components.

We find that 15 of the 16 countries in the comparison achieved gains in levels of capital input relative to the United States over the 1973-2011 period. The Netherlands exhibited the largest increase in the relative level of capital input, followed by Australia. Both countries saw relative capital input more than double between 1973 and 2011. Sweden, by contrast, experienced a decline in relative capital input.

More interesting are the patterns of growth in capital input over sub-periods. All 17 countries increased absolute levels of capital input between 1973 and 1979. The 1970s were characterized by high rates of inflation. Monetary restraint was not sufficient to cause interest rates to rise as fast as the rate of inflation. As a result, real interest rates fell sharply.

Contributing to the already high rates of inflation was the spike in energy prices following the 1973 oil embargo. The major oil exporting countries recycled 'petrodollars' through developing countries fueling rapid growth in demand for agricultural exports. Further, the sharp and unexpected rise in energy prices likely accelerated the rate of obsolescence of the stock of capital. These developments provided incentive for new capital expenditures, both to replace losses in the productive capacity of existing capital assets and to expand productive capacity.

The conditions that led to expansion during the 1970s came to an end in the early 1980s. By then, the United States was vigorously pursuing policies to curb inflation. The change to restrictive monetary policy initiated by the Federal Reserve pushed up interest rates sharply, sending the global economy into recession. Growth in capital input slowed dramatically over the next two decades. In fact, 12 of the 17 countries actually reduced absolute levels of capital input. By the early 2000s, the level of capital input in United States agriculture had fallen by a third. Growth in capital input in the United States resumed during the 2000s. Still, the European countries, Canada and Australia posted gains in relative levels of capital input between 1979 and 2011.

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Table 1. Capital Stocks, 1973-2011 (Millions of 2005 national currencies)

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-burg	NL	Portugal	Finland	Sweden	UK	Australia	Canada	US
Transportation equipment:																	
1973	276	3462	7021	4197	4733	2529	348	2368	56	607	800	591	6714	634	7532	5426	20237
1974	303	4048	7264	4393	4960	2785	384	2491	59	699	988	622	6392	699	7817	6366	20363
1975	332	4512	7477	4513	5187	3113	373	2610	59	802	1224	650	6324	738	8017	7090	20262
1976	339	4999	7732	4721	5368	3268	388	2622	59	856	1475	663	6427	762	8204	8117	20434
1977	359	5616	8133	4988	5671	3469	412	2704	57	918	1621	663	6510	825	8536	9054	21769
1978	371	6048	8529	5151	5745	3581	443	2744	63	1036	1747	655	6379	883	8793	9920	23127
1979	391	6308	8800	5251	5988	3637	489	2801	65	1150	1778	650	6082	917	9075	10786	24276
1980	404	6351	9268	5629	6090	3754	538	2802	61	1351	1814	661	5995	970	9515	11762	25679
1981	394	6057	9618	6064	6599	3857	577	2978	67	1406	1815	664	5672	961	9893	11919	25581
1982	386	5734	10101	6228	6409	4046	627	3102	62	1454	1812	660	5561	982	10170	11606	24669
1983	376	5459	10228	6257	6152	4106	640	3178	59	1479	1729	646	5297	978	10203	11214	23446
1984	355	5106	10522	6134	5829	4136	635	3198	55	1587	1689	628	5071	996	10264	10866	22618
1985	346	4797	10622	6003	5554	4102	637	3162	50	1604	1603	602	4900	1015	10592	10391	21646
1986	329	4639	10692	6032	5358	4017	643	3059	46	1608	1515	593	4621	1013	10654	9483	20270
1987	324	4594	10666	5495	5139	3823	667	3031	42	1542	1455	581	4322	963	10274	8603	18881
1988	328	4420	10857	4914	4964	3768	673	3028	41	1567	1458	567	4149	966	9929	7781	18163
1989	326	4201	11021	4393	4791	3628	693	3024	41	1551	1722	568	3959	960	9856	6965	17750
1990	320	4211	11306	3964	4602	3706	777	3050	41	1575	1861	560	3953	966	9795	6281	17599
1991	310	4202	11589	3585	4383	3742	863	3067	41	1617	1699	547	3865	955	9478	5569	17573
1992	287	4278	12393	3210	4175	3703	890	3072	43	1644	1559	512	3625	919	8963	5099	17232
1993	277	4223	12916	2953	3811	3616	901	3021	43	1677	1492	474	3485	897	8387	4703	16855
1994	258	4124	12969	2643	3456	3491	909	2903	42	1601	1384	440	3405	907	7833	4251	16640
1995	236	4037	12973	2406	3259	3435	963	2816	42	1538	1293	414	3350	927	7616	3856	16422
1996	218	4036	12923	2307	3152	3417	984	2792	41	1483	1196	397	3284	961	7782	3616	16451
1997	205	4083	12948	2279	3189	3448	1009	2791	40	1440	1132	383	3258	986	8088	3338	16957
1998	197	4175	12617	2375	3357	3535	1016	2788	39	1422	1085	383	3257	979	8623	3222	17945
1999	194	4176	12542	2524	3628	3661	1002	2761	38	1409	1088	390	3233	937	9284	3212	19125
2000	198	4135	12549	2748	3756	3796	983	2795	36	1419	1120	402	3254	895	9841	3105	20026
2001	201	4147	12501	2921	3814	3911	957	2819	35	1441	1144	411	3400	856	10137	3015	20900
2002	206	4229	12481	3031	3820	3972	930	2909	33	1463	1163	422	3512	836	10109	2828	22010
2003	215	4230	12458	3194	3842	4018	900	3072	32	1429	1175	437	3653	822	10132	2735	22998
2004	219	4201	12024	3346	3942	4071	873	3145	34	1407	1151	449	3739	824	10344	2557	24140
2005	225	4200	11963	3433	4047	4144	848	3280	36	1386	1157	457	3812	839	10826	2427	25380
2006	229	4242	12034	3517	4015	4203	825	3360	36	1360	1118	458	3847	841	11355	2319	26416
2007	239	4368	12424	3540	3994	4238	803	3445	36	1375	1080	453	3880	849	11472	2194	26593
2008	256	4509	13038	3729	4049	4338	783	3528	36	1460	1071	453	3992	884	11540	2190	27140
2009	256	4575	13980	3868	4100	4498	768	3565	38	1564	1068	452	4107	934	11795	2212	27661
2010	270	4407	14071	3779	3976	4503	737	3434	39	1573	1045	448	4127	967	11869	2375	27396
2011	281	4232	14063	3502	3861	4449	700	3246	39	1582	1033	442	4134	998	12110	2569	26867

Table 1. Continued

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-burg	NL.	Portugal	Finland	Sweden	UK	Australia	Canada	US
Machinery:																	
1973	3484	25085	61019	7274	9040	40257	1135	30877	178	9541	460	4930	74514	11913	30027	14124	165563
1974	3715	30403	62727	7575	9152	43016	1335	33208	186	10349	552	4890	73324	12164	30885	14854	176448
1975	3864	33856	62818	7809	9106	45635	1405	34955	192	11021	672	4853	72885	11987	31634	16168	185102
1976	3903	36916	62849	8165	9070	47703	1449	36731	192	11367	808	4880	73701	11746	32371	17732	189909
1977	4042	40191	63178	8602	9172	49630	1622	39162	181	11759	922	4956	74977	11705	33318	19627	194552
1978	4166	43187	64220	8932	9387	50889	1799	41427	175	12540	1041	4985	74966	11686	34195	20920	197926
1979	4375	46644	65638	9027	9781	52639	1966	43685	181	13550	1115	4966	74284	11702	35132	22104	204431
1980	4460	50284	66749	9441	10368	54113	2117	45973	190	14529	1205	4996	73473	11581	36309	23586	211561
1981	4412	51040	66830	9845	11009	55180	2185	47130	182	15001	1306	5110	71494	11183	37476	24546	212238
1982	4302	50494	65635	9872	11772	55859	2311	47418	181	15266	1388	5238	69501	10950	38599	25117	209914
1983	4271	50225	64696	9936	12428	56949	2347	47206	193	15586	1434	5420	68419	10903	39407	24636	201279
1984	4182	50216	64466	9888	13124	57482	2344	46752	199	16030	1437	5536	67506	11122	40195	23645	191906
1985	4116	50871	63660	9836	13714	57740	2319	46329	200	16163	1429	5600	67275	11378	41345	22802	182505
1986	4051	52477	62817	9920	13910	57661	2268	45915	196	16404	1423	5674	66103	11451	42251	21743	170415
1987	4043	53730	62020	9554	14348	57131	2179	45491	191	16276	1462	5662	64460	11194	42687	20586	158254
1988	3999	53906	60983	9031	14617	56504	2134	45043	189	16297	1553	5580	62966	10991	43199	19358	149844
1989	3946	53292	60348	8643	14506	56528	2132	44950	190	16267	1669	5546	62169	10840	44084	18124	142594
1990	3880	53461	60197	8304	14032	56698	2163	44875	190	16264	1779	5597	61697	10692	44940	16903	137310
1991	3829	53437	60551	7887	13253	56509	2134	44533	200	16348	1905	5575	60627	10447	45313	15771	133279
1992	3688	52483	59980	7441	12853	55812	2095	44124	210	16304	1975	5375	58421	10165	45274	14660	128436
1993	3615	51399	59049	7120	11977	54624	2056	43737	216	16328	2006	5018	55733	9981	45000	13693	123013
1994	3475	49550	57151	6658	11139	53334	2028	42978	218	15987	1934	4691	53112	10051	44630	13669	118349
1995	3314	48737	55278	6238	10433	52497	2047	42707	223	15557	1877	4400	51421	10222	44232	13500	114077
1996	3161	48684	53574	5884	9891	52135	2123	42276	222	15172	1854	4259	49712	10498	43840	13282	109461
1997	3027	49233	52078	5588	9614	52198	2168	42225	223	14814	1841	4138	48473	10676	43600	13189	105903
1998	2921	50154	50926	5385	9256	52471	2194	42102	222	14578	1835	4084	47568	10576	43497	13655	103210
1999	2842	50189	50064	5223	8935	53106	2265	42253	222	14360	1842	4050	46536	10178	43475	14214	101396
2000	2786	49820	49446	5157	8574	53801	2345	42540	217	14251	1859	4055	46062	9772	43468	14168	99176
2001	2741	49995	48914	5115	8460	54116	2410	42976	214	14218	1880	4035	46796	9385	43713	14111	97265
2002	2709	50870	47883	5066	8475	54002	2463	43170	210	14158	1918	4047	47309	9132	44086	13902	96754
2003	2719	51074	47097	5148	8608	53879	2523	43576	208	13774	1940	4117	48236	8914	44544	13807	96327
2004	2700	50911	46430	5383	8730	53933	2597	44228	220	13416	1966	4189	48716	8843	45164	13888	97122
2005	2713	50781	45744	5606	9097	54226	2700	45388	232	13047	2005	4254	49171	8888	46042	14010	99864
2006	2740	51249	44243	6074	9254	54438	2802	46114	233	12666	2047	4294	49324	8831	47172	14132	101103
2007	2835	52453	43115	6325	9825	54724	2952	47008	239	12457	2086	4342	49535	8825	47988	14089	100493
2008	3010	54535	42387	6878	10114	55655	3183	47870	240	12622	2102	4459	50598	9037	48693	14496	101320
2009	3043	55834	42604	7468	10589	57084	3393	48631	251	12913	2128	4549	51755	9379	49809	14885	105307
2010	3240	54725	42104	7778	11365	57410	3288	48134	259	12830	2121	4596	52029	9601	51072	15259	105659
2011	3428	53480	41328	7752	11918	57222	3164	48166	267	12787	2114	4630	52222	9802	52076	15753	107462

Table 1. Continued

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-	NL.	Portugal	Finland	Sweden	UK	Australia	Canada	US

									burg									
	Non-residential structures:																	
1973	1786	86026	72003	14977	45050	23121	18558	106091	1417	7046	6911	15449	35577	12482	34522	14878	186068	
1974	1918	88830	72335	15254	47107	24934	19126	105907	1430	7782	7237	15677	36390	13288	36809	15073	190015	
1975	2043	91299	72866	15455	48753	26668	19356	105580	1445	8412	7618	15860	37048	13966	38982	15349	195091	
1976	2103	93554	73467	15720	50096	28099	19516	105445	1470	8877	8038	16149	37882	14465	40817	15629	196886	
1977	2174	95916	74145	15939	51014	29492	19910	105192	1518	9406	8408	16424	38750	14841	42558	15868	200013	
1978	2259	98483	74922	16116	53221	30856	20311	104670	1483	10224	8837	16684	39384	15202	44179	16172	203503	
1979	2353	101999	75699	16342	54849	32303	20693	104038	1466	11190	9147	16989	40249	15688	46050	16529	208707	
1980	2458	105910	76295	16483	56180	33794	21407	103886	1451	12202	9557	17300	41073	16145	48223	16924	214429	
1981	2544	107638	76800	16435	57390	35221	21997	105273	1451	13028	9985	17665	41699	16561	50304	17589	216733	
1982	2603	107777	77139	16530	58615	36522	22544	106873	1454	13736	10356	17954	41893	16870	52158	18400	216476	
1983	2621	107984	77507	16599	60136	37685	22922	108774	1447	14392	10420	18372	42139	17348	53644	19098	215178	
1984	2661	108099	77972	16636	61348	38726	23069	110813	1459	15133	10490	18793	42387	17927	55108	19506	212703	
1985	2705	108295	78321	16850	62335	39680	23116	113068	1455	15671	10522	19094	42541	18496	56768	19915	210074	
1986	2738	108463	78629	17028	63109	40751	23045	115670	1444	16253	10512	19387	42353	18857	58269	19819	205810	
1987	2748	109157	78792	17002	63780	41714	22907	117791	1421	17025	10520	19681	42120	18995	59624	19578	201739	
1988	2836	109750	78891	16863	64127	42690	22857	120111	1401	17570	10515	19912	41997	19066	60978	19552	198070	
1989	2891	109714	78981	16764	64176	43799	22750	123145	1385	18284	10502	20195	41953	19117	62208	19583	193618	
1990	2943	109955	79077	16646	64513	44910	22694	125535	1376	19082	10508	20370	42009	19156	63292	19574	189469	
1991	3038	110636	79203	16511	64644	46101	22908	127446	1367	19876	10476	20537	42223	19272	64390	19337	185392	
1992	3118	110601	79585	16407	64753	47364	23011	128999	1354	20726	10446	20649	42427	19291	65789	19081	181261	
1993	3242	111117	80011	16279	64875	48454	22991	129738	1337	21303	10378	20658	42899	19293	67351	18798	176709	
1994	3272	110637	80328	16146	64981	49198	22886	129968	1313	21818	10297	20598	43616	19360	68807	18683	172553	
1995	3267	110828	80621	16018	65064	49893	22782	130188	1288	22248	10231	20492	44496	19566	70267	18665	168635	
1996	3288	111067	80977	15829	65130	50749	22745	130528	1262	22669	10151	20384	45248	19625	71883	18731	164455	
1997	3350	111453	81278	15619	65192	51784	22870	130674	1236	23055	10090	20333	45553	19685	73316	18992	160957	
1998	3422	112410	81576	15426	65243	52782	22830	130560	1208	23545	10003	20331	45973	19741	74716	19335	157525	
1999	3501	113671	81940	15264	65293	53756	22727	130428	1182	24129	9903	20375	46762	19714	76561	19650	154501	
2000	3589	114416	82269	15136	65290	54845	22499	130145	1156	25080	9825	20453	47417	19510	78573	19854	152028	
2001	3673	115632	82545	15016	65266	55903	22310	129952	1132	25764	9789	20484	48038	19287	80352	20145	150284	
2002	3753	117481	82801	14881	65267	57278	22031	129652	1108	26492	9754	20526	48729	19141	81853	20470	147443	
2003	3845	119007	83067	14678	65286	58343	21727	129549	1083	27521	9736	20571	49413	18967	83463	20768	145125	
2004	3911	120383	83144	14505	65282	59255	21402	129696	1069	28650	9703	20555	50125	18859	85425	20692	142691	
2005	3996	121602	83075	14364	65246	60061	21113	129836	1071	29383	9662	20448	50565	18832	87735	20600	140620	
2006	4081	123051	83113	14256	65200	60781	20824	129773	1070	30190	9595	20417	51223	18884	90420	20358	138240	
2007	4185	125182	83152	14142	65276	61558	20613	129390	1070	30946	9522	20374	51925	18978	93585	20008	135623	
2008	4322	128385	83163	14039	65305	62304	20779	128700	1062	31785	9457	20405	52662	19045	97164	20124	133254	
2009	4375	130295	83185	14018	65298	62670	21666	127991	1068	32747	9349	20347	53562	19218	101143	20170	131705	
2010	4502	130719	83153	14034	65333	62724	21513	127139	1080	33539	9241	20285	54192	19476	105101	20365	129720	
2011	4617	131148	83122	14030	65389	61756	21318	126198	1091	34107	9132	20174	54767	19729	108998	20565	127269	

Table 1. continued

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-burg	NL.	Portugal	Finland	Sweden	UK	Australia	Canada	US
Land:																	
1973	26415	438169	236456	25631	282069	180791	77358	321724	1892	62155	38300	12904	110044	127930	269822	142722	1268016
1974	26204	432600	234593	25390	282111	180386	77540	319404	1878	61629	38110	12969	110302	128141	269122	142239	1261019
1975	26883	432638	233852	25635	277553	180156	75366	313401	1878	61355	37999	13003	109927	130946	267357	142161	1262358
1976	26659	432230	233263	26383	276113	179811	75362	311025	1864	61086	37870	13056	110123	130679	263817	141942	1268526
1977	25585	435190	231980	26274	272923	179392	75849	308657	1878	60700	37795	12827	109760	126457	261709	141718	1275034
1978	25376	434537	229558	26758	271184	178997	76017	306285	1850	60263	37687	12782	109779	126412	263547	141390	1277391
1979	25109	433882	216392	26502	268588	178706	76268	303914	1850	59898	37570	12726	109249	126226	266009	140948	1272532
1980	24835	431604	215174	26787	267524	178271	75724	301542	1850	59502	37520	12569	108967	127025	268059	140711	1262330
1981	24660	430423	214377	26952	267220	177640	75918	299163	1821	59217	37439	12483	108188	126182	267221	140790	1249857
1982	24565	428932	213335	27138	267361	177061	75968	296606	1807	59052	37375	12335	108433	125904	264540	140194	1238136
1983	24495	422572	212421	27604	267301	176620	76059	295063	1821	59160	37305	12264	108038	125567	263496	139914	1229415
1984	24427	423955	211736	27967	267741	175689	76137	293351	1821	59389	37265	11086	107711	125685	263677	139656	1223078
1985	24322	420650	211187	28251	268256	175530	76351	291633	1807	59688	37226	12274	107241	124996	256638	139379	1217873
1986	24199	418590	210801	28303	267635	174945	76459	289918	1821	59027	37189	12046	106660	124777	250214	139046	1212626
1987	24094	415469	210044	28660	267965	174428	79436	288214	1807	59093	37119	11488	105982	125864	249023	138948	1206274
1988	23954	413236	209232	28757	268782	173538	78120	286516	1793	59038	37264	11792	105250	125776	247011	138653	1198172
1989	23819	411620	208740	28822	268243	171516	76209	284821	1793	58849	36987	11777	104594	124426	244890	138356	1189206
1990	23749	413598	235926	29266	266941	171112	74034	282761	1807	58921	37597	10891	104322	124274	243676	138079	1180697
1991	23644	410650	231593	29244	263618	170775	72816	280302	1793	58487	37366	11911	102451	124000	242219	137797	1174177
1992	23571	409060	230538	29717	262228	170843	72391	277433	1793	58365	37889	12107	101946	124090	240690	138001	1171175
1993	23802	382942	231609	29887	260076	170853	72171	274567	1807	58566	37576	11221	102302	124090	242876	138218	1172668
1994	23984	360715	232493	30001	258240	170778	71971	271703	1807	58174	37710	11031	102458	123772	243484	138487	1177070
1995	24047	367125	232087	30192	253853	170486	71997	268897	1807	57958	37788	11455	102983	122749	242908	138746	1182373
1996	24213	371383	231357	30390	251419	170256	71234	266026	1793	58325	37286	10382	104404	122593	244309	139783	1186867
1997	24364	375616	230894	30847	253675	169994	72602	263221	1802	57859	37064	10729	104093	122086	244136	139517	1189071
1998	24513	373658	231320	30380	252816	169920	72350	260427	1809	58079	37111	11244	103483	121624	243088	139248	1187898
1999	24551	360672	227169	30397	249648	169856	72398	257663	1813	57836	36244	11389	102468	121374	244702	138977	1183333
2000	24559	360332	225762	30156	247617	169794	72135	254477	1816	57499	35995	11707	101262	119468	244530	138704	1176259
2001	24469	363657	225381	30241	247592	169547	71597	253160	1820	56768	35762	11858	100865	121443	242340	138430	1167679
2002	24516	362954	224405	30521	246762	169563	71038	251386	1823	57298	35368	11927	100522	121776	242183	138552	1158797
2003	24467	359803	225772	30483	246604	169231	70992	249645	1823	56536	35109	11928	100564	121510	242890	138675	1150720
2004	24496	363019	225957	30097	245178	169043	69966	247819	1822	56585	35134	12278	100576	121136	244682	138802	1143189
2005	24348	372112	225733	29294	245875	169033	69821	246036	1837	56847	35105	12018	101496	120889	238915	138940	1135817
2006	24264	373255	224066	28336	239962	168507	69156	243863	1834	56357	35055	12680	99956	122462	232476	139093	1128306
2007	24090	364869	224073	29563	231194	167928	69358	240155	1862	56172	35004	12464	99557	121222	231767	137874	1120485
2008	24150	366669	223750	29147	235619	167236	75102	233958	1856	56569	34954	11709	98542	121164	225300	136629	1118610
2009	23997	359524	223137	28898	235937	166683	74639	240034	1860	56211	34909	11423	98737	118608	220728	135393	1118210
2010	23870	361647	219771	28957	236621	166129	74103	243874	1865	54905	34865	12448	98627	117938	224550	134160	1116668
2011	23522	362318	220183	30929	234824	165851	73849	243194	1869	54540	34822	11702	98105	117725	228382	132931	1113660

Table 2. Capital rental prices, 1973-2011

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-burg	NL	Portugal	Finland	Sweden	UK	Australia	Canada	US
Transportation equipment:																	
1973	0.0511	0.0254	0.0328	0.0030	0.0173	0.0311	0.0258	0.0122	0.0294	0.0690	0.0035	0.0225	0.0224	0.0214	0.0320	0.0501	0.0586
1974	0.0529	0.0297	0.0347	0.0039	0.0186	0.0340	0.0301	0.0152	0.0316	0.0698	0.0039	0.0262	0.0222	0.0254	0.0337	0.0507	0.0582
1975	0.0613	0.0338	0.0364	0.0046	0.0210	0.0393	0.0330	0.0187	0.0371	0.0709	0.0038	0.0301	0.0236	0.0320	0.0380	0.0548	0.0606
1976	0.0635	0.0371	0.0392	0.0055	0.0222	0.0451	0.0420	0.0219	0.0429	0.0711	0.0038	0.0376	0.0284	0.0388	0.0442	0.0576	0.0650
1977	0.0666	0.0404	0.0398	0.0065	0.0220	0.0496	0.0491	0.0272	0.0513	0.0736	0.0051	0.0427	0.0324	0.0406	0.0496	0.0594	0.0751
1978	0.0694	0.0450	0.0409	0.0079	0.0266	0.0552	0.0567	0.0307	0.0494	0.0777	0.0087	0.0501	0.0370	0.0466	0.0545	0.0672	0.0788
1979	0.0727	0.0520	0.0438	0.0094	0.0311	0.0591	0.0633	0.0362	0.0533	0.0803	0.0121	0.0583	0.0418	0.0533	0.0594	0.0762	0.0880
1980	0.0818	0.0586	0.0486	0.0119	0.0355	0.0657	0.0623	0.0388	0.0563	0.0860	0.0158	0.0687	0.0447	0.0609	0.0646	0.0902	0.1019
1981	0.0930	0.0690	0.0545	0.0147	0.0406	0.0765	0.0676	0.0470	0.0616	0.0907	0.0183	0.0810	0.0582	0.0684	0.0717	0.1096	0.1174
1982	0.1040	0.0851	0.0594	0.0184	0.0481	0.0882	0.0740	0.0554	0.0657	0.0945	0.0227	0.0899	0.0618	0.0730	0.0808	0.1171	0.1277
1983	0.1064	0.0863	0.0621	0.0225	0.0569	0.0996	0.0830	0.0604	0.0713	0.1037	0.0263	0.0929	0.0681	0.0769	0.0849	0.1156	0.1366
1984	0.1128	0.0917	0.0637	0.0264	0.0642	0.1076	0.0910	0.0674	0.0742	0.1050	0.0459	0.1020	0.0788	0.0832	0.0899	0.1292	0.1431
1985	0.1165	0.0908	0.0674	0.0290	0.0701	0.1105	0.0924	0.0722	0.0788	0.1165	0.0566	0.1082	0.0794	0.0890	0.0997	0.1359	0.1427
1986	0.1177	0.0960	0.0695	0.0354	0.0887	0.1081	0.1021	0.0799	0.0663	0.1303	0.0734	0.1108	0.0803	0.0909	0.1142	0.1417	0.1380
1987	0.1182	0.1108	0.0702	0.0474	0.0945	0.1190	0.1044	0.0830	0.0884	0.1369	0.0901	0.1173	0.0848	0.0998	0.1314	0.1549	0.1499
1988	0.1204	0.1162	0.0740	0.0548	0.1013	0.1295	0.1119	0.0880	0.0911	0.1419	0.1031	0.1257	0.0900	0.1046	0.1396	0.1548	0.1534
1989	0.1261	0.1255	0.0790	0.0646	0.1092	0.1392	0.1255	0.0978	0.0974	0.1485	0.1094	0.1331	0.0939	0.1095	0.1437	0.1614	0.1568
1990	0.1303	0.1267	0.0847	0.0784	0.1184	0.1549	0.1323	0.1052	0.1058	0.1591	0.1304	0.1415	0.1016	0.1189	0.1465	0.1737	0.1612
1991	0.1353	0.1237	0.1054	0.1066	0.1204	0.1657	0.1291	0.1081	0.1121	0.1692	0.1365	0.1501	0.1030	0.1187	0.1479	0.1767	0.1567
1992	0.1406	0.1282	0.1032	0.1300	0.1237	0.1719	0.1362	0.1172	0.1187	0.1735	0.1256	0.1357	0.1032	0.1271	0.1528	0.1672	0.1580
1993	0.1384	0.1348	0.1014	0.1509	0.1227	0.1710	0.1384	0.1227	0.1198	0.1739	0.1086	0.1317	0.1004	0.1300	0.1585	0.1724	0.1647
1994	0.1408	0.1321	0.1022	0.1685	0.1255	0.1724	0.1400	0.1248	0.1232	0.1775	0.0928	0.1416	0.1115	0.1398	0.1735	0.1808	0.1823
1995	0.1452	0.1348	0.1042	0.1591	0.1331	0.1801	0.1463	0.1385	0.1268	0.1808	0.1524	0.1498	0.1281	0.1534	0.1838	0.1909	0.1905
1996	0.1448	0.1394	0.1095	0.1620	0.1332	0.1818	0.1486	0.1487	0.1392	0.1790	0.1611	0.1155	0.1359	0.1607	0.1809	0.1945	0.1919
1997	0.1478	0.1402	0.1106	0.1539	0.1295	0.1813	0.1433	0.1494	0.1401	0.1758	0.1692	0.1210	0.1357	0.1609	0.1734	0.2030	0.1988
1998	0.1493	0.1346	0.1060	0.1516	0.1292	0.1679	0.1345	0.1402	0.1521	0.1664	0.1578	0.1144	0.1316	0.1608	0.1672	0.2117	0.1913
1999	0.1524	0.1355	0.1059	0.1473	0.1292	0.1636	0.1444	0.1433	0.1540	0.1667	0.1466	0.1098	0.1316	0.1613	0.1729	0.2276	0.1936
2000	0.1557	0.1391	0.1102	0.1506	0.1326	0.1651	0.1460	0.1477	0.1628	0.1714	0.1469	0.1228	0.1365	0.1624	0.1774	0.2203	0.1974
2001	0.1508	0.1383	0.1141	0.1454	0.1416	0.1645	0.1466	0.1500	0.1764	0.1708	0.1501	0.1248	0.1158	0.1640	0.1715	0.2111	0.1834
2002	0.1454	0.1396	0.1138	0.1513	0.1417	0.1655	0.1471	0.1485	0.1803	0.1662	0.1493	0.1253	0.1222	0.1663	0.1720	0.2276	0.1768
2003	0.1455	0.1397	0.1108	0.1505	0.1441	0.1638	0.1494	0.1463	0.1689	0.1682	0.1605	0.1302	0.1304	0.1622	0.1726	0.2200	0.1703
2004	0.1442	0.1403	0.1092	0.1518	0.1448	0.1626	0.1508	0.1481	0.1606	0.1618	0.1550	0.1415	0.1294	0.1577	0.1695	0.1985	0.1673
2005	0.1482	0.1350	0.1063	0.1511	0.1482	0.1602	0.1519	0.1510	0.1513	0.1624	0.1541	0.1429	0.1325	0.1583	0.1643	0.1739	0.1695
2006	0.1625	0.1435	0.1086	0.1545	0.1514	0.1633	0.1519	0.1558	0.1548	0.1613	0.1583	0.1492	0.1372	0.1595	0.1606	0.1713	0.1707
2007	0.1685	0.1486	0.1135	0.1585	0.1530	0.1708	0.1519	0.1616	0.1610	0.1591	0.1591	0.1703	0.1409	0.1622	0.1606	0.1678	0.1646
2008	0.1744	0.1722	0.1155	0.1620	0.1561	0.1777	0.1565	0.1643	0.1589	0.1661	0.1660	0.1646	0.1422	0.1652	0.1607	0.1569	0.1620
2009	0.1846	0.1711	0.1134	0.1618	0.1563	0.1894	0.1684	0.1667	0.1566	0.1652	0.1752	0.1644	0.1475	0.1626	0.1582	0.1566	0.1614
2010	0.1954	0.1816	0.1099	0.1916	0.1599	0.1945	0.1880	0.1699	0.1555	0.1689	0.1884	0.1688	0.1549	0.1759	0.1713	0.1791	0.1677
2011	0.2083	0.1793	0.1074	0.2198	0.1584	0.1940	0.2050	0.1822	0.1535	0.1737	0.2081	0.1733	0.1559	0.1583	0.1639	0.1574	0.1684

Table 2. Continued

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-burg	NL	Portugal	Finland	Sweden	UK	Australia	Canada	US
	Machinery:																
1973	0.0386	0.0205	0.0335	0.0023	0.0102	0.0199	0.0250	0.0083	0.0340	0.0305	0.0036	0.0210	0.0174	0.0174	0.0222	0.0393	0.0284
1974	0.0410	0.0242	0.0360	0.0028	0.0116	0.0221	0.0297	0.0105	0.0349	0.0329	0.0041	0.0240	0.0187	0.0215	0.0235	0.0406	0.0285
1975	0.0467	0.0273	0.0378	0.0035	0.0133	0.0274	0.0339	0.0130	0.0396	0.0350	0.0040	0.0281	0.0218	0.0273	0.0264	0.0443	0.0301
1976	0.0473	0.0297	0.0390	0.0040	0.0156	0.0290	0.0426	0.0155	0.0458	0.0380	0.0039	0.0356	0.0235	0.0326	0.0305	0.0509	0.0347
1977	0.0488	0.0323	0.0397	0.0046	0.0178	0.0309	0.0449	0.0169	0.0571	0.0411	0.0052	0.0418	0.0255	0.0331	0.0341	0.0521	0.0424
1978	0.0503	0.0361	0.0408	0.0051	0.0223	0.0336	0.0512	0.0186	0.0533	0.0437	0.0088	0.0487	0.0277	0.0372	0.0375	0.0569	0.0446
1979	0.0528	0.0419	0.0436	0.0061	0.0262	0.0353	0.0560	0.0212	0.0559	0.0456	0.0109	0.0578	0.0301	0.0426	0.0408	0.0661	0.0500
1980	0.0600	0.0475	0.0487	0.0074	0.0191	0.0386	0.0571	0.0242	0.0609	0.0489	0.0138	0.0684	0.0341	0.0485	0.0444	0.0798	0.0574
1981	0.0691	0.0562	0.0553	0.0092	0.0328	0.0452	0.0643	0.0248	0.0676	0.0550	0.0173	0.0805	0.0422	0.0543	0.0499	0.0992	0.0721
1982	0.0786	0.0701	0.0613	0.0122	0.0373	0.0554	0.0712	0.0304	0.0719	0.0609	0.0234	0.0830	0.0457	0.0576	0.0574	0.1026	0.0765
1983	0.0812	0.0697	0.0626	0.0143	0.0434	0.0637	0.0792	0.0346	0.0801	0.0633	0.0325	0.0860	0.0495	0.0604	0.0595	0.0992	0.0846
1984	0.0867	0.0728	0.0642	0.0173	0.0497	0.0685	0.0835	0.0384	0.0851	0.0631	0.0436	0.0976	0.0550	0.0660	0.0628	0.1134	0.0907
1985	0.0897	0.0708	0.0671	0.0199	0.0545	0.0707	0.0905	0.0417	0.0895	0.0663	0.0487	0.1138	0.0579	0.0706	0.0717	0.1169	0.0881
1986	0.0893	0.0754	0.0685	0.0239	0.0597	0.0725	0.0936	0.0455	0.0935	0.0690	0.0588	0.1070	0.0591	0.0710	0.0842	0.1147	0.0785
1987	0.0890	0.0894	0.0687	0.0302	0.0621	0.0787	0.0922	0.0486	0.1001	0.0740	0.0858	0.1096	0.0616	0.0785	0.0976	0.1215	0.0826
1988	0.0906	0.0934	0.0715	0.0340	0.0665	0.0858	0.0917	0.0512	0.1043	0.0782	0.0916	0.1165	0.0648	0.0814	0.1028	0.1194	0.0820
1989	0.0960	0.1009	0.0747	0.0405	0.0724	0.0931	0.0990	0.0580	0.1120	0.0831	0.1065	0.1234	0.0713	0.0843	0.1059	0.1219	0.0832
1990	0.0995	0.1025	0.0802	0.0493	0.0805	0.1032	0.1070	0.0637	0.1240	0.0908	0.1061	0.1312	0.0786	0.0916	0.1082	0.1286	0.0869
1991	0.1038	0.0987	0.0824	0.0651	0.0806	0.1088	0.0966	0.0686	0.1314	0.0979	0.0956	0.1421	0.0815	0.0895	0.1086	0.1287	0.0855
1992	0.1083	0.1069	0.0850	0.0788	0.0822	0.1146	0.1034	0.0769	0.1392	0.1000	0.0923	0.1377	0.0806	0.0954	0.1122	0.1293	0.0840
1993	0.1053	0.1088	0.0848	0.0917	0.0786	0.1128	0.1119	0.0817	0.1391	0.0984	0.0860	0.1309	0.0775	0.0992	0.1161	0.1357	0.0866
1994	0.1051	0.1157	0.0866	0.1013	0.0818	0.1107	0.1131	0.0854	0.1424	0.0998	0.1038	0.1380	0.0870	0.1092	0.1289	0.1442	0.0960
1995	0.1081	0.1163	0.0879	0.1073	0.0931	0.1140	0.1202	0.0914	0.1468	0.1014	0.1264	0.1415	0.1023	0.1214	0.1384	0.1543	0.0987
1996	0.1073	0.1203	0.0924	0.1158	0.0952	0.1102	0.1243	0.0963	0.1536	0.0988	0.1338	0.0957	0.1083	0.1273	0.1353	0.1542	0.1018
1997	0.1095	0.1165	0.0929	0.1136	0.0883	0.1084	0.1206	0.0966	0.1489	0.0989	0.1386	0.1021	0.1075	0.1269	0.1283	0.1583	0.1091
1998	0.1101	0.1121	0.0905	0.1134	0.0864	0.1040	0.1150	0.0900	0.1383	0.0917	0.1227	0.1013	0.1031	0.1265	0.1225	0.1672	0.1066
1999	0.1122	0.1138	0.0905	0.1210	0.0849	0.1011	0.1135	0.0938	0.1355	0.0929	0.1107	0.1008	0.1027	0.1265	0.1271	0.1882	0.1139
2000	0.1146	0.1185	0.0939	0.1200	0.0875	0.1034	0.1144	0.1030	0.1316	0.0981	0.1087	0.1148	0.1072	0.1277	0.1310	0.1845	0.1167
2001	0.1106	0.1153	0.0968	0.1175	0.0943	0.1093	0.1202	0.1060	0.1301	0.0965	0.1150	0.1198	0.0919	0.1303	0.1239	0.1693	0.1062
2002	0.1062	0.1159	0.0967	0.1230	0.0940	0.1116	0.1227	0.1050	0.1294	0.0937	0.1124	0.1155	0.0976	0.1357	0.1228	0.1895	0.1047
2003	0.1055	0.1140	0.0945	0.1221	0.0943	0.1093	0.1202	0.1032	0.1193	0.0967	0.1078	0.1154	0.1045	0.1320	0.1231	0.1940	0.1051
2004	0.1040	0.1168	0.0935	0.1222	0.0936	0.1060	0.1067	0.1029	0.1035	0.0986	0.1036	0.1219	0.1026	0.1269	0.1211	0.1646	0.1049
2005	0.1060	0.1178	0.1201	0.1231	0.0959	0.1029	0.1015	0.1060	0.0935	0.1028	0.1017	0.1175	0.1042	0.1261	0.1172	0.1537	0.1096
2006	0.1157	0.1198	0.1222	0.1017	0.0987	0.1051	0.0991	0.1091	0.0967	0.1031	0.1001	0.1194	0.1074	0.1274	0.1138	0.1564	0.1193
2007	0.1202	0.1260	0.1272	0.1070	0.1014	0.1063	0.0959	0.1150	0.0981	0.1073	0.0977	0.1183	0.1105	0.1299	0.1135	0.1540	0.1227
2008	0.1248	0.1317	0.1468	0.1123	0.1057	0.1094	0.0950	0.1174	0.1001	0.1126	0.1025	0.1103	0.1107	0.1332	0.1136	0.1458	0.1219
2009	0.1320	0.1296	0.1445	0.1084	0.1072	0.1171	0.1018	0.1189	0.0956	0.1121	0.1066	0.1116	0.1140	0.1300	0.1110	0.1507	0.1270
2010	0.1397	0.1382	0.1406	0.1258	0.1096	0.1174	0.1210	0.1217	0.0938	0.1141	0.1087	0.1167	0.1191	0.1411	0.1232	0.1722	0.1316
2011	0.1493	0.1348	0.1377	0.1532	0.1081	0.1184	0.1381	0.1380	0.0867	0.1169	0.1233	0.1207	0.1197	0.1276	0.1156	0.1514	0.1330

Table 2. Continued

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-burg	NL	Portugal	Finland	Sweden	UK	Australia	Canada	US
	Non-residential structures:																
1973	0.0157	0.0060	0.0137	0.0004	0.0015	0.0072	0.0024	0.0029	0.0081	0.0099	0.0010	0.0051	0.0051	0.0105	0.0043	0.0127	0.0106
1974	0.0172	0.0087	0.0156	0.0005	0.0018	0.0082	0.0037	0.0038	0.0079	0.0109	0.0012	0.0067	0.0056	0.0138	0.0049	0.0142	0.0108
1975	0.0195	0.0087	0.0151	0.0007	0.0020	0.0098	0.0048	0.0042	0.0089	0.0115	0.0012	0.0077	0.0068	0.0194	0.0057	0.0148	0.0101
1976	0.0191	0.0087	0.0133	0.0007	0.0024	0.0106	0.0055	0.0047	0.0098	0.0124	0.0011	0.0095	0.0070	0.0193	0.0067	0.0155	0.0105
1977	0.0190	0.0096	0.0122	0.0008	0.0027	0.0113	0.0049	0.0049	0.0120	0.0135	0.0015	0.0119	0.0071	0.0145	0.0074	0.0143	0.0147
1978	0.0188	0.0118	0.0119	0.0010	0.0035	0.0122	0.0045	0.0048	0.0118	0.0143	0.0025	0.0145	0.0074	0.0127	0.0081	0.0179	0.0147
1979	0.0200	0.0155	0.0143	0.0012	0.0040	0.0126	0.0044	0.0052	0.0124	0.0151	0.0026	0.0171	0.0078	0.0140	0.0087	0.0212	0.0175
1980	0.0259	0.0192	0.0194	0.0016	0.0054	0.0138	0.0044	0.0066	0.0134	0.0171	0.0032	0.0235	0.0095	0.0169	0.0095	0.0283	0.0217
1981	0.0345	0.0251	0.0266	0.0023	0.0053	0.0182	0.0058	0.0073	0.0148	0.0211	0.0042	0.0316	0.0133	0.0217	0.0118	0.0374	0.0310
1982	0.0429	0.0365	0.0306	0.0030	0.0064	0.0236	0.0068	0.0090	0.0188	0.0244	0.0070	0.0345	0.0147	0.0234	0.0157	0.0367	0.0305
1983	0.0433	0.0308	0.0304	0.0035	0.0084	0.0281	0.0068	0.0100	0.0194	0.0249	0.0135	0.0334	0.0163	0.0226	0.0160	0.0322	0.0343
1984	0.0463	0.0297	0.0302	0.0039	0.0093	0.0289	0.0077	0.0107	0.0208	0.0239	0.0176	0.0354	0.0182	0.0251	0.0169	0.0440	0.0377
1985	0.0476	0.0250	0.0326	0.0040	0.0094	0.0293	0.0081	0.0113	0.0221	0.0257	0.0143	0.0369	0.0193	0.0299	0.0229	0.0446	0.0348
1986	0.0452	0.0282	0.0329	0.0049	0.0098	0.0279	0.0077	0.0123	0.0229	0.0292	0.0192	0.0370	0.0185	0.0291	0.0304	0.0424	0.0278
1987	0.0440	0.0410	0.0327	0.0064	0.0108	0.0325	0.0077	0.0136	0.0249	0.0315	0.0240	0.0397	0.0185	0.0337	0.0351	0.0485	0.0323
1988	0.0454	0.0431	0.0358	0.0078	0.0131	0.0370	0.0089	0.0145	0.0260	0.0357	0.0220	0.0440	0.0203	0.0334	0.0352	0.0482	0.0329
1989	0.0502	0.0488	0.0400	0.0100	0.0172	0.0417	0.0110	0.0194	0.0294	0.0402	0.0294	0.0494	0.0248	0.0347	0.0380	0.0512	0.0335
1990	0.0522	0.0493	0.0462	0.0123	0.0223	0.0489	0.0124	0.0222	0.0349	0.0462	0.0271	0.0551	0.0318	0.0412	0.0415	0.0574	0.0339
1991	0.0552	0.0435	0.0525	0.0176	0.0228	0.0538	0.0134	0.0232	0.0377	0.0515	0.0258	0.0597	0.0314	0.0351	0.0412	0.0568	0.0310
1992	0.0579	0.0508	0.0540	0.0205	0.0240	0.0570	0.0165	0.0277	0.0403	0.0520	0.0202	0.0543	0.0289	0.0352	0.0409	0.0548	0.0279
1993	0.0537	0.0520	0.0501	0.0245	0.0208	0.0544	0.0177	0.0303	0.0388	0.0478	0.0189	0.0467	0.0247	0.0325	0.0384	0.0572	0.0277
1994	0.0513	0.0581	0.0479	0.0271	0.0205	0.0543	0.0163	0.0321	0.0392	0.0482	0.0309	0.0459	0.0289	0.0356	0.0426	0.0617	0.0341
1995	0.0530	0.0592	0.0488	0.0275	0.0266	0.0562	0.0190	0.0370	0.0407	0.0481	0.0362	0.0496	0.0407	0.0442	0.0485	0.0657	0.0355
1996	0.0518	0.0627	0.0521	0.0269	0.0259	0.0552	0.0192	0.0385	0.0411	0.0464	0.0449	0.0348	0.0402	0.0498	0.0480	0.0577	0.0363
1997	0.0530	0.0577	0.0526	0.0215	0.0201	0.0529	0.0192	0.0338	0.0383	0.0452	0.0447	0.0423	0.0370	0.0481	0.0449	0.0577	0.0407
1998	0.0523	0.0514	0.0500	0.0209	0.0167	0.0492	0.0187	0.0228	0.0369	0.0386	0.0326	0.0381	0.0319	0.0442	0.0420	0.0613	0.0379
1999	0.0532	0.0522	0.0482	0.0220	0.0156	0.0495	0.0184	0.0216	0.0385	0.0389	0.0246	0.0324	0.0307	0.0427	0.0448	0.0690	0.0439
2000	0.0542	0.0571	0.0515	0.0210	0.0172	0.0518	0.0193	0.0256	0.0425	0.0440	0.0255	0.0417	0.0339	0.0441	0.0481	0.0660	0.0466
2001	0.0542	0.0516	0.0553	0.0191	0.0210	0.0536	0.0205	0.0268	0.0436	0.0430	0.0276	0.0407	0.0398	0.0486	0.0417	0.0514	0.0375
2002	0.0535	0.0515	0.0525	0.0215	0.0209	0.0554	0.0211	0.0243	0.0460	0.0411	0.0285	0.0388	0.0441	0.0503	0.0388	0.0599	0.0362
2003	0.0515	0.0490	0.0475	0.0209	0.0212	0.0536	0.0217	0.0214	0.0426	0.0399	0.0275	0.0409	0.0472	0.0453	0.0394	0.0599	0.0357
2004	0.0500	0.0503	0.0449	0.0213	0.0205	0.0511	0.0221	0.0218	0.0382	0.0422	0.0290	0.0493	0.0420	0.0459	0.0422	0.0512	0.0345
2005	0.0467	0.0462	0.0419	0.0240	0.0218	0.0484	0.0233	0.0242	0.0363	0.0459	0.0290	0.0471	0.0388	0.0457	0.0447	0.0422	0.0371
2006	0.0470	0.0440	0.0434	0.0262	0.0233	0.0477	0.0237	0.0275	0.0395	0.0457	0.0300	0.0499	0.0376	0.0440	0.0450	0.0547	0.0437
2007	0.0527	0.0497	0.0475	0.0309	0.0250	0.0517	0.0244	0.0322	0.0459	0.0498	0.0309	0.0556	0.0405	0.0456	0.0472	0.0618	0.0465
2008	0.0578	0.0552	0.0492	0.0353	0.0279	0.0543	0.0289	0.0338	0.0507	0.0544	0.0375	0.0530	0.0395	0.0476	0.0506	0.0532	0.0444
2009	0.0610	0.0480	0.0468	0.0306	0.0287	0.0579	0.0383	0.0335	0.0536	0.0535	0.0462	0.0504	0.0373	0.0423	0.0483	0.0605	0.0438
2010	0.0645	0.0526	0.0430	0.0527	0.0326	0.0549	0.0503	0.0354	0.0503	0.0567	0.0571	0.0465	0.0345	0.0445	0.0593	0.0681	0.0434
2011	0.0698	0.0424	0.0402	0.0859	0.0300	0.0551	0.0644	0.0549	0.0459	0.0598	0.0824	0.0522	0.0353	0.0343	0.0500	0.0545	0.0419

Table 2. Continued

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-burg	NL	Portugal	Finland	Sweden	UK	Australia	Canada	US
Land:																	
1973	0.0024	0.0004	0.0090	0.0009	0.0016	0.0044	0.0017	0.0022	0.0013	0.0004	0.0002	0.0013	0.0027	0.0063	0.0004	0.0019	0.0042
1974	0.0039	0.0026	0.0111	0.0017	0.0022	0.0060	0.0037	0.0032	0.0008	0.0014	0.0003	0.0030	0.0027	0.0073	0.0007	0.0024	0.0041
1975	0.0043	0.0015	0.0089	0.0016	0.0013	0.0071	0.0054	0.0026	0.0003	0.0013	0.0002	0.0014	0.0032	0.0070	0.0005	0.0020	0.0019
1976	0.0046	0.0009	0.0053	0.0015	0.0013	0.0071	0.0066	0.0024	0.0002	0.0008	0.0002	0.0026	0.0028	0.0067	0.0002	0.0020	0.0012
1977	0.0039	0.0012	0.0030	0.0013	0.0012	0.0063	0.0061	0.0022	0.0005	0.0004	0.0003	0.0050	0.0021	0.0035	0.0001	0.0008	0.0077
1978	0.0025	0.0034	0.0016	0.0014	0.0017	0.0053	0.0039	0.0012	0.0007	0.0003	0.0003	0.0090	0.0015	0.0010	0.0001	0.0023	0.0069
1979	0.0041	0.0062	0.0064	0.0020	0.0013	0.0046	0.0032	0.0006	0.0007	0.0005	0.0001	0.0130	0.0012	0.0011	0.0001	0.0045	0.0106
1980	0.0124	0.0081	0.0177	0.0048	0.0022	0.0048	0.0019	0.0031	0.0008	0.0022	0.0002	0.0194	0.0026	0.0010	0.0001	0.0116	0.0155
1981	0.0230	0.0092	0.0351	0.0090	0.0008	0.0094	0.0027	0.0051	0.0011	0.0049	0.0003	0.0211	0.0048	0.0005	0.0012	0.0239	0.0265
1982	0.0285	0.0122	0.0399	0.0107	0.0014	0.0156	0.0028	0.0055	0.0028	0.0063	0.0009	0.0220	0.0053	0.0005	0.0036	0.0189	0.0223
1983	0.0259	0.0080	0.0388	0.0097	0.0031	0.0176	0.0018	0.0051	0.0020	0.0065	0.0021	0.0220	0.0058	0.0007	0.0023	0.0098	0.0241
1984	0.0261	0.0070	0.0379	0.0079	0.0034	0.0158	0.0021	0.0044	0.0021	0.0057	0.0027	0.0272	0.0054	0.0033	0.0020	0.0185	0.0255
1985	0.0259	0.0051	0.0395	0.0057	0.0027	0.0136	0.0020	0.0036	0.0024	0.0068	0.0016	0.0283	0.0058	0.0069	0.0056	0.0173	0.0192
1986	0.0222	0.0076	0.0375	0.0060	0.0027	0.0129	0.0012	0.0037	0.0021	0.0113	0.0022	0.0291	0.0037	0.0052	0.0084	0.0135	0.0099
1987	0.0209	0.0147	0.0350	0.0072	0.0035	0.0153	0.0010	0.0046	0.0031	0.0143	0.0027	0.0345	0.0028	0.0079	0.0107	0.0154	0.0126
1988	0.0225	0.0135	0.0371	0.0107	0.0064	0.0199	0.0019	0.0051	0.0041	0.0205	0.0026	0.0401	0.0032	0.0078	0.0136	0.0141	0.0120
1989	0.0272	0.0156	0.0413	0.0149	0.0108	0.0251	0.0030	0.0113	0.0074	0.0247	0.0034	0.0459	0.0051	0.0090	0.0165	0.0170	0.0118
1990	0.0288	0.0161	0.0492	0.0174	0.0152	0.0332	0.0042	0.0143	0.0169	0.0297	0.0029	0.0532	0.0087	0.0112	0.0153	0.0219	0.0120
1991	0.0307	0.0130	0.0572	0.0243	0.0133	0.0382	0.0048	0.0145	0.0185	0.0339	0.0026	0.0447	0.0072	0.0037	0.0128	0.0203	0.0092
1992	0.0310	0.0151	0.0582	0.0246	0.0116	0.0385	0.0069	0.0179	0.0245	0.0330	0.0019	0.0273	0.0044	0.0041	0.0131	0.0188	0.0061
1993	0.0266	0.0140	0.0459	0.0286	0.0081	0.0329	0.0076	0.0201	0.0180	0.0278	0.0015	0.0202	0.0019	0.0048	0.0122	0.0196	0.0060
1994	0.0230	0.0179	0.0386	0.0291	0.0076	0.0318	0.0064	0.0213	0.0122	0.0237	0.0043	0.0198	0.0043	0.0095	0.0160	0.0217	0.0120
1995	0.0244	0.0204	0.0391	0.0267	0.0128	0.0338	0.0087	0.0266	0.0140	0.0257	0.0086	0.0204	0.0103	0.0200	0.0206	0.0237	0.0124
1996	0.0233	0.0226	0.0384	0.0221	0.0122	0.0329	0.0093	0.0269	0.0139	0.0248	0.0129	0.0120	0.0102	0.0249	0.0188	0.0183	0.0126
1997	0.0246	0.0211	0.0395	0.0115	0.0072	0.0317	0.0098	0.0216	0.0113	0.0238	0.0154	0.0182	0.0092	0.0201	0.0164	0.0194	0.0168
1998	0.0243	0.0203	0.0391	0.0088	0.0033	0.0283	0.0087	0.0076	0.0095	0.0164	0.0124	0.0148	0.0068	0.0169	0.0142	0.0228	0.0132
1999	0.0270	0.0206	0.0377	0.0090	0.0017	0.0286	0.0072	0.0067	0.0148	0.0202	0.0077	0.0103	0.0062	0.0151	0.0151	0.0330	0.0186
2000	0.0281	0.0236	0.0413	0.0064	0.0032	0.0320	0.0066	0.0120	0.0231	0.0307	0.0097	0.0210	0.0093	0.0162	0.0173	0.0271	0.0208
2001	0.0275	0.0249	0.0460	0.0014	0.0065	0.0335	0.0056	0.0129	0.0233	0.0256	0.0119	0.0193	0.0150	0.0206	0.0123	0.0136	0.0100
2002	0.0262	0.0248	0.0444	0.0046	0.0055	0.0340	0.0040	0.0091	0.0263	0.0197	0.0124	0.0177	0.0170	0.0232	0.0106	0.0248	0.0073
2003	0.0235	0.0229	0.0374	0.0027	0.0048	0.0314	0.0040	0.0037	0.0190	0.0118	0.0102	0.0205	0.0197	0.0158	0.0128	0.0243	0.0063
2004	0.0232	0.0267	0.0331	0.0022	0.0024	0.0266	0.0043	0.0035	0.0106	0.0129	0.0118	0.0315	0.0162	0.0162	0.0170	0.0105	0.0038
2005	0.0198	0.0264	0.0293	0.0053	0.0029	0.0212	0.0046	0.0057	0.0049	0.0174	0.0122	0.0288	0.0177	0.0169	0.0185	0.0030	0.0054
2006	0.0182	0.0248	0.0299	0.0069	0.0033	0.0188	0.0041	0.0089	0.0085	0.0164	0.0139	0.0319	0.0165	0.0163	0.0163	0.0102	0.0121
2007	0.0195	0.0322	0.0335	0.0116	0.0038	0.0207	0.0033	0.0139	0.0175	0.0224	0.0154	0.0374	0.0199	0.0217	0.0162	0.0165	0.0129
2008	0.0217	0.0375	0.0351	0.0157	0.0069	0.0226	0.0082	0.0145	0.0225	0.0331	0.0275	0.0339	0.0154	0.0271	0.0167	0.0066	0.0063
2009	0.0219	0.0256	0.0336	0.0090	0.0068	0.0211	0.0143	0.0126	0.0260	0.0312	0.0434	0.0252	0.0093	0.0130	0.0117	0.0099	0.0033
2010	0.0223	0.0288	0.0310	0.0285	0.0126	0.0185	0.0239	0.0142	0.0197	0.0337	0.0701	0.0258	0.0051	0.0190	0.0256	0.0289	0.0040
2011	0.0245	0.0129	0.0303	0.0565	0.0092	0.0191	0.0367	0.0348	0.0132	0.0370	0.1296	0.0337	0.0053	0.0094	0.0183	0.0100	0.0037

Table 3. Price Indexes of Capital Input, 1973-2011

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-burg	NL	Portugal	Finland	Sweden	UK	Australia	Canada	US
1973	0.2563	0.0772	0.3184	0.0321	0.1995	0.1895	0.2117	0.1474	0.2673	0.1987	0.0253	0.1190	0.1544	0.2729	0.1141	0.3587	0.3982
1974	0.3114	0.1591	0.3661	0.0493	0.2589	0.2312	0.3896	0.2005	0.2556	0.2433	0.0312	0.1542	0.1635	0.3227	0.1270	0.3903	0.3957
1975	0.3499	0.1375	0.3409	0.0530	0.2032	0.2803	0.5371	0.1975	0.2749	0.2504	0.0297	0.1640	0.1900	0.3489	0.1366	0.4008	0.3180
1976	0.3605	0.1295	0.2893	0.0563	0.2140	0.2913	0.6539	0.2051	0.3075	0.2545	0.0285	0.2106	0.1997	0.3549	0.1500	0.4327	0.3198
1977	0.3485	0.1466	0.2565	0.0604	0.2185	0.2886	0.6115	0.2107	0.3819	0.2647	0.0375	0.2667	0.2079	0.2486	0.1641	0.3962	0.6382
1978	0.3213	0.2125	0.2406	0.0681	0.2857	0.2897	0.4619	0.1824	0.3722	0.2783	0.0554	0.3388	0.2187	0.1768	0.1790	0.4877	0.6261
1979	0.3732	0.3018	0.3268	0.0860	0.2773	0.2877	0.4259	0.1820	0.3928	0.2935	0.0599	0.4175	0.2337	0.2006	0.1944	0.6160	0.8068
1980	0.6067	0.3696	0.5109	0.1370	0.3570	0.3124	0.3418	0.2938	0.4256	0.3521	0.0748	0.5505	0.2772	0.2251	0.2129	0.9090	1.0504
1981	0.9031	0.4410	0.7818	0.2105	0.2981	0.4283	0.4344	0.3667	0.4755	0.4453	0.0962	0.6730	0.3637	0.2424	0.2728	1.3688	1.5687
1982	1.0881	0.5890	0.8837	0.2600	0.3822	0.5877	0.4698	0.4291	0.5952	0.5085	0.1561	0.7147	0.3952	0.2581	0.3671	1.2752	1.4567
1983	1.0419	0.4817	0.8759	0.2721	0.5628	0.6741	0.4323	0.4489	0.6090	0.5290	0.2698	0.7135	0.4308	0.2680	0.3516	1.0144	1.5944
1984	1.0767	0.4653	0.8707	0.2769	0.6282	0.6756	0.4792	0.4551	0.6497	0.5120	0.3690	0.7993	0.4698	0.3733	0.3633	1.3641	1.7026
1985	1.0899	0.4003	0.9137	0.2681	0.6031	0.6566	0.4934	0.4564	0.6925	0.5562	0.3246	0.8666	0.4945	0.5047	0.4911	1.3634	1.4510
1986	0.9969	0.4757	0.8972	0.3137	0.6558	0.6493	0.4460	0.4892	0.7027	0.6592	0.4253	0.8545	0.4790	0.4577	0.6228	1.2560	1.0227
1987	0.9633	0.7052	0.8675	0.3998	0.7416	0.7317	0.4326	0.5477	0.7860	0.7423	0.5434	0.9205	0.4875	0.5706	0.7376	1.3834	1.1822
1988	1.0110	0.7049	0.9190	0.4942	0.9933	0.8488	0.5143	0.5875	0.8395	0.8779	0.5443	1.0159	0.5187	0.5754	0.8110	1.3363	1.1610
1989	1.1530	0.7910	1.0050	0.6231	1.3771	0.9753	0.6491	0.8624	0.9952	0.9877	0.6665	1.1232	0.5931	0.6207	0.8863	1.4546	1.1666
1990	1.2094	0.8054	1.1537	0.7496	1.7868	1.1665	0.7706	1.0101	1.3415	1.1300	0.6619	1.2446	0.7014	0.7290	0.8920	1.6756	1.1947
1991	1.2775	0.7112	1.3041	1.0283	1.6746	1.2827	0.8032	1.0517	1.4462	1.2548	0.6333	1.2754	0.7026	0.4880	0.8493	1.6276	1.0525
1992	1.3103	0.8060	1.3319	1.1604	1.5862	1.3287	1.0059	1.2479	1.6509	1.2542	0.5451	1.1040	0.6592	0.5146	0.8669	1.5603	0.9008
1993	1.1846	0.7973	1.1560	1.3555	1.2819	1.2318	1.0856	1.3667	1.4800	1.1481	0.4882	0.9657	0.5968	0.5310	0.8562	1.6271	0.9107
1994	1.0931	0.9139	1.0591	1.4579	1.2575	1.2073	0.9887	1.4397	1.3663	1.0968	0.6941	0.9754	0.6991	0.7041	0.9914	1.7600	1.2606
1995	1.1431	0.9641	1.0750	1.4259	1.7723	1.2591	1.1944	1.6851	1.4460	1.1338	0.9921	1.0289	0.9095	1.0663	1.1358	1.8964	1.3040
1996	1.1104	1.0319	1.0979	1.3689	1.7164	1.2264	1.2445	1.7374	1.4742	1.0994	1.2336	0.7023	0.9413	1.2410	1.0912	1.6660	1.3302
1997	1.1541	0.9706	1.1173	1.0843	1.2337	1.1918	1.2602	1.5284	1.3574	1.0768	1.3345	0.8375	0.9098	1.1031	1.0080	1.7289	1.5826
1998	1.1472	0.9121	1.0899	1.0207	0.8920	1.1056	1.1717	0.9587	1.2697	0.8934	1.0819	0.7677	0.8318	0.9956	0.9336	1.9080	1.3845
1999	1.2231	0.9254	1.0626	1.0555	0.7490	1.0973	1.0834	0.9340	1.4136	0.9580	0.8192	0.6728	0.8163	0.9397	0.9805	2.4038	1.6914
2000	1.2619	1.0137	1.1376	0.9964	0.8927	1.1642	1.0669	1.1761	1.6670	1.1693	0.8891	0.8789	0.8952	0.9792	1.0494	2.1572	1.8229
2001	1.2361	0.9985	1.2299	0.8514	1.2241	1.2183	1.0430	1.2308	1.6912	1.0801	0.9982	0.8686	0.9040	1.1302	0.9080	1.5349	1.2260
2002	1.1869	0.9984	1.1938	0.9691	1.1550	1.2429	0.9667	1.0906	1.8026	0.9698	1.0173	0.8286	0.9820	1.2246	0.8611	2.0705	1.0818
2003	1.1101	0.9493	1.0690	0.9233	1.1096	1.1891	0.9726	0.8970	1.5327	0.8566	0.9393	0.8699	1.0673	0.9787	0.9027	2.0630	1.0277
2004	1.0912	1.0260	0.9950	0.9191	0.9315	1.0984	0.9723	0.8944	1.2070	0.8938	0.9904	1.0515	0.9911	0.9836	0.9776	1.3889	0.9033
2005	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	1.0000	1.0000	1.0000
2006	0.9924	0.9668	1.0232	0.9798	1.0627	0.9754	0.9722	1.1374	1.1470	0.9849	1.0641	1.0562	0.9991	0.9777	0.9554	1.3513	1.3582
2007	1.0607	1.1370	1.1089	1.1216	1.1366	1.0278	0.9309	1.3491	1.4686	1.1169	1.1190	1.1566	1.0686	1.1479	0.9657	1.6109	1.4102
2008	1.1498	1.2729	1.1923	1.2455	1.4044	1.0806	1.2968	1.3985	1.6650	1.3254	1.5838	1.0859	1.0175	1.3226	0.9935	1.1635	1.1146
2009	1.1907	1.0346	1.1518	1.0929	1.4109	1.1153	1.8314	1.3563	1.7766	1.2898	2.1912	1.0074	0.9622	0.8869	0.9005	1.3377	1.0020
2010	1.2408	1.1352	1.0840	1.6742	1.8621	1.0709	2.6459	1.4334	1.5712	1.3585	3.1663	0.9831	0.9336	1.0919	1.2024	2.1394	1.0522
2011	1.3431	0.8113	1.0519	2.5048	1.5963	1.0845	3.6813	2.2654	1.3265	1.4393	5.3605	1.1046	0.9437	0.7453	1.0189	1.3216	1.0352

Table 4. Capital Input (Millions of 2005 national currencies)

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-burg	NL	Portugal	Finland	Sweden	UK	Australia	Canada	US
1973	934	16456	16905	1795	3407	9682	1026	8852	81	2153	738	1789	12513	4262	10298	3591	33147
1974	977	17312	17063	1827	3446	10055	1056	8949	83	2314	787	1796	12365	4321	10620	3799	34002
1975	1017	18199	17097	1861	3440	10411	1041	8967	84	2464	847	1811	12322	4403	10904	4048	35055
1976	1023	19164	17161	1929	3461	10681	1046	9061	85	2553	914	1832	12464	4407	11211	4374	35782
1977	1037	20252	17302	1989	3492	10957	1068	9228	85	2659	963	1852	12659	4360	11596	4782	35424
1978	1062	21001	17584	2045	3534	11166	1091	9432	83	2855	1018	1865	12663	4468	11932	5057	35942
1979	1099	21755	17486	2061	3603	11444	1124	9690	84	3093	1054	1872	12552	4514	12299	5309	36580
1980	1108	22402	17600	2131	3676	11709	1160	9697	84	3306	1095	1886	12445	4540	12777	5559	37144
1981	1102	22521	17625	2191	3845	11893	1186	9805	84	3411	1132	1913	12165	4499	12851	5668	37027
1982	1093	22382	17539	2213	3919	12031	1221	9839	83	3485	1159	1937	11927	4480	13112	5698	36651
1983	1089	22199	17453	2237	3966	12179	1236	9857	84	3560	1158	1974	11764	4509	13320	5642	35894
1984	1079	22161	17444	2236	4008	12257	1237	9853	85	3673	1157	1967	11627	4498	13539	5521	35148
1985	1073	22173	17380	2230	4046	12317	1234	9851	84	3721	1145	2025	11573	4565	13764	5413	34360
1986	1064	22384	17317	2244	4048	12329	1226	9848	83	3764	1128	2038	11379	4595	13895	5217	33169
1987	1061	22535	17228	2160	4069	12271	1218	9844	81	3773	1124	2028	11111	4570	13933	5005	31857
1988	1058	22521	17133	2055	4077	12219	1204	9847	80	3800	1139	2038	10884	4545	13968	4798	30955
1989	1053	22372	17081	1973	4052	12199	1198	9882	80	3820	1203	2046	10746	4507	14080	4596	30170
1990	1047	22449	18235	1914	4009	12261	1206	9905	79	3857	1249	2021	10685	4489	14200	4421	29579
1991	1043	22430	18098	1845	3932	12290	1213	9892	80	3891	1233	2065	10539	4483	14222	4245	29110
1992	1031	22281	18095	1784	3887	12281	1212	9861	81	3923	1214	2049	10250	4424	14171	4098	28492
1993	1035	21686	18137	1735	3793	12211	1207	9807	81	3959	1200	1978	9923	4384	14134	3968	27798
1994	1025	20984	18042	1668	3696	12107	1202	9715	80	3930	1164	1921	9595	4393	14058	3918	27254
1995	1008	21013	17888	1612	3610	12046	1210	9654	80	3895	1140	1881	9412	4411	14024	3867	26863
1996	995	21113	17732	1572	3556	12043	1214	9591	79	3877	1116	1834	9256	4445	14098	3837	26467
1997	987	21300	17607	1544	3557	12092	1234	9549	78	3844	1102	1820	9118	4460	14180	3801	26224
1998	982	21438	17508	1528	3550	12173	1234	9534	77	3843	1093	1823	9020	4441	14307	3838	26088
1999	979	21224	17296	1528	3559	12293	1239	9521	77	3839	1082	1824	8909	4377	14530	3889	26014
2000	978	21209	17210	1549	3530	12423	1239	9512	75	3859	1085	1835	8866	4276	14714	3878	25845
2001	976	21377	17161	1592	3523	12507	1236	9535	74	3868	1087	1839	8979	4247	14850	3870	25710
2002	978	21567	17052	1592	3521	12566	1230	9543	73	3908	1089	1845	9069	4215	14963	3835	25718
2003	983	21593	17044	1625	3534	12600	1226	9640	72	3899	1089	1859	9210	4174	15112	3827	25759
2004	986	21720	16946	1676	3564	12650	1219	9723	73	3908	1088	1878	9300	4154	15343	3819	26048
2005	989	22001	16852	1708	3616	12729	1219	9863	75	3903	1091	1874	9390	4157	15528	3855	26590
2006	995	22160	16633	1766	3608	12786	1216	9928	75	3889	1087	1897	9410	4179	15759	3803	26714
2007	1009	22187	16543	1800	3630	12849	1223	9975	76	3900	1082	1893	9456	4161	16015	3757	26552
2008	1039	22621	16509	1870	3676	12984	1268	9977	75	3971	1080	1882	9597	4190	16177	3813	26695
2009	1043	22672	16610	1944	3719	13166	1296	10089	76	4040	1078	1881	9793	4201	16500	3855	27290
2010	1071	22580	16457	1951	3761	13195	1280	10046	77	4035	1074	1909	9864	4238	16892	3887	27217
2011	1093	22442	16366	1960	3775	13111	1267	9989	78	4047	1071	1885	9908	4284	17305	3966	27286

Table 5. Definition of Variables in Hedonic Regression

Variable	Unit	Definition
Land price	Local currency per hectare	Price of agricultural land
Land area	Hectares	Total agricultural land area
Population accessibility	Index	A measure of the size and proximity of nearby population centers
Irrigation	Percent of total land area	Irrigated
Aluminum toxicity	“	Soils with aluminum toxicity
Calcareous	“	Soils with calcareous reactions
Sulfidic	“	Sulfidic soils
Moisture stress	“	Experiencing continuous soil moisture stress
Aridic torric	“	Aridic or torric soil moisture regime too dry to grow a crop without irrigation
Leaching	“	High leaching potential
Waterlogging	“	Soils experiencing waterlogging
High phosphorus	“	High phosphorus fixation
Alkalinity	“	Soil alkalinity
Salinity	“	Soil salinity
Cryic frigid	“	Cryic and frigid (<8jC mean annual), non-iso soil temperature regimes, where management practices can help warm topsoils for short-term cereal production
Permafrost	“	Permafrost with 50cm gelisols; no cropping possingle
Cracking clays	“	Cracking clays
Volcanic	“	Volcanic soils
Organic content	“	Organic soil: >12% organic C to a depth of 50 cm or more (histosols and histic groups)
Clayey topsoil	“	Clayey topsoil: >35%
Loamy topsoil	“	Loamy topsoil <35% clay
Clayey subsoil	“	Clayey subsoil
Loamy subsoil	“	Loamy subsoil
Rock	“	Rock or other hard root-restricting layer within 50 cm
Sandy topsoil	“	Sandy topsoil
Sandy subsoil	“	Sandy subsoil

Source: Sanchez et al. (2003).

Table 6. Regression of Land Prices on Characteristics

Variable	Coefficient	t-value	Variable	Coefficient	t-value
D1 (US)	8.780178***	68.33	Irrigation	0.044185***	3.47
D2 (Canada)	8.715092***	62.91	Moisture stress	-1.407117**	-2.89
D3 (Australia)	8.147432***	25.70	Irrigation*moisture stress	0.0492249***	4.37
D4 (France)	8.266801***	39.39	Population accessibility	0.3777769***	30.71
D5 (Finland)	8.537561***	8.48	Aluminum toxicity	0.010853	0.84
D6 (UK)	8.048193***	10.26	Salinity	0.000971	0.18
D7 (Ireland)	9.577729***	3.92	Aridic torric	-0.070154***	-9.47
D8 (Belgium)	8.818908***	4.52	Waterlogging	0.074809***	3.32
D9 (Denmark)	10.986746***	9.16	High phosphorus	0.021248	0.14
D10 (Lux.)	9.019151	0.36	Alkalinity	0.026959	0.71
D11 (Netherlands)	9.399772***	5.03	Cryic frigid	0.044433	1.15
D12 (Germany)	8.396953***	14.93	Permafrost	-0.120157	-1.21
D13 (Italy)	9.236173***	18.99	Cracking clays	0.001839	0.04
D14 (Spain)	9.162312***	22.99	Volcanic soils	-0.015798	-0.60
D15 (Greece)	8.942430*	3.29	Organic content	0.023412	0.60
D16 (Portugal)	8.910408***	3.89	Rock	0.063127**	2.47
D16 (Portugal)	8.910408***	3.89			
D17 (Sweden)	10.524742***	3.76	λ-Clay top	6.049499	1.38
Clayey topsoil	2.597846	1.37	λ-Sandy top	0.596233***	3.10
Loamy topsoil	0.288363***	3.02	λ-Irriper	1.354560***	7.17
Sandy topsoil	0.010818*	1.89	λ-Soilmoist	3.090652	2.99
Loamy subsoil	-0.047666	-1.07	λ-Pop	0.088007***	4.32
Clay subsoil	-0.011116	-0.46	λ-Alum	0.572417	1.25
Sandy subsoil	0.045021	0.79	λ-Salinity	2.449942	0.98
			λ-Arid	0.265039***	3.55
Observations	3579		Log Likelihood -2506	AIC 5095	
Schwarz Criterion	5355		Sigma 0.480817 (84.32)		

Table 7. Purchasing Power Parities for Capital Input

Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-burg	NL	Portugal	Finland	Sweden	UK	Australia	Canada	US
1973	0.3694	1.1226	0.4729	0.0317	0.1349	0.2439	0.2238	0.1306	0.2420	0.3325	0.0261	0.1821	1.7446	0.2622	0.1987	0.4763	0.3982
1974	0.4489	2.3128	0.5438	0.0488	0.1751	0.2976	0.4119	0.1777	0.2313	0.4071	0.0323	0.2360	1.8470	0.3100	0.2210	0.5183	0.3957
1975	0.5044	1.9985	0.5063	0.0525	0.1374	0.3609	0.5679	0.1751	0.2489	0.4191	0.0307	0.2510	2.1469	0.3352	0.2377	0.5322	0.3180
1976	0.5196	1.8820	0.4297	0.0557	0.1447	0.3750	0.6913	0.1818	0.2783	0.4258	0.0295	0.3222	2.2568	0.3410	0.2611	0.5745	0.3198
1977	0.5024	2.1307	0.3809	0.0598	0.1478	0.3716	0.6465	0.1867	0.3457	0.4429	0.0387	0.4082	2.3488	0.2389	0.2857	0.5261	0.6382
1978	0.4631	3.0888	0.3573	0.0674	0.1932	0.3729	0.4883	0.1616	0.3369	0.4658	0.0572	0.5185	2.4710	0.1699	0.3116	0.6476	0.6261
1979	0.5379	4.3861	0.4854	0.0851	0.1875	0.3703	0.4502	0.1612	0.3555	0.4912	0.0619	0.6389	2.6408	0.1927	0.3384	0.8180	0.8068
1980	0.8746	5.3706	0.7587	0.1355	0.2414	0.4022	0.3613	0.2603	0.3853	0.5893	0.0773	0.8424	3.1318	0.2163	0.3705	1.2070	1.0504
1981	1.3018	6.4091	1.1612	0.2083	0.2016	0.5513	0.4592	0.3249	0.4304	0.7452	0.0994	1.0298	4.1094	0.2329	0.4748	1.8175	1.5687
1982	1.5685	8.5600	1.3125	0.2572	0.2584	0.7565	0.4966	0.3802	0.5387	0.8511	0.1613	1.0937	4.4651	0.2479	0.6389	1.6932	1.4567
1983	1.5018	7.0007	1.3009	0.2692	0.3805	0.8678	0.4571	0.3978	0.5512	0.8853	0.2788	1.0918	4.8669	0.2575	0.6119	1.3469	1.5944
1984	1.5521	6.7624	1.2933	0.2740	0.4248	0.8698	0.5067	0.4033	0.5881	0.8568	0.3813	1.2231	5.3077	0.3587	0.6322	1.8112	1.7026
1985	1.5711	5.8170	1.3571	0.2653	0.4078	0.8453	0.5217	0.4044	0.6268	0.9308	0.3354	1.3261	5.5877	0.4848	0.8547	1.8103	1.4510
1986	1.4370	6.9130	1.3325	0.3104	0.4434	0.8359	0.4715	0.4335	0.6361	1.1032	0.4394	1.3075	5.4117	0.4397	1.0839	1.6677	1.0227
1987	1.3886	10.2492	1.2884	0.3956	0.5014	0.9420	0.4573	0.4853	0.7115	1.2422	0.5615	1.4086	5.5079	0.5482	1.2838	1.8369	1.1822
1988	1.4574	10.2446	1.3649	0.4890	0.6716	1.0927	0.5437	0.5206	0.7599	1.4692	0.5624	1.5546	5.8608	0.5528	1.4115	1.7744	1.1610
1989	1.6620	11.4958	1.4926	0.6165	0.9312	1.2555	0.6862	0.7642	0.9008	1.6529	0.6886	1.7188	6.7018	0.5963	1.5425	1.9314	1.1666
1990	1.7433	11.7048	1.7136	0.7416	1.2082	1.5017	0.8147	0.8951	1.2142	1.8912	0.6839	1.9045	7.9246	0.7004	1.5525	2.2249	1.1947
1991	1.8415	10.3354	1.9369	1.0174	1.1323	1.6513	0.8492	0.9319	1.3091	2.1000	0.6544	1.9516	7.9383	0.4689	1.4782	2.1611	1.0525
1992	1.8889	11.7135	1.9782	1.1481	1.0725	1.7106	1.0635	1.1058	1.4943	2.0989	0.5632	1.6893	7.4480	0.4944	1.5088	2.0717	0.9008
1993	1.7076	11.5873	1.7169	1.3411	0.8668	1.5858	1.1477	1.2111	1.3396	1.9214	0.5044	1.4776	6.7426	0.5101	1.4901	2.1605	0.9107
1994	1.5757	13.2813	1.5730	1.4425	0.8503	1.5542	1.0452	1.2758	1.2367	1.8355	0.7171	1.4925	7.8994	0.6765	1.7254	2.3369	1.2606
1995	1.6477	14.0115	1.5966	1.4108	1.1984	1.6209	1.2627	1.4932	1.3088	1.8975	1.0250	1.5745	10.2766	1.0245	1.9768	2.5180	1.3040
1996	1.6007	14.9961	1.6306	1.3544	1.1606	1.5788	1.3157	1.5396	1.3344	1.8398	1.2746	1.0746	10.6355	1.1922	1.8991	2.2121	1.3302
1997	1.6637	14.1057	1.6594	1.0728	0.8342	1.5343	1.3323	1.3544	1.2287	1.8020	1.3789	1.2816	10.2796	1.0598	1.7544	2.2956	1.5826
1998	1.6537	13.2557	1.6188	1.0099	0.6031	1.4234	1.2388	0.8496	1.1493	1.4951	1.1179	1.1747	9.3982	0.9565	1.6249	2.5334	1.3845
1999	1.7631	13.4485	1.5783	1.0443	0.5065	1.4127	1.1454	0.8277	1.2795	1.6033	0.8464	1.0294	9.2229	0.9028	1.7064	3.1918	1.6914
2000	1.8191	14.7320	1.6896	0.9859	0.6036	1.4987	1.1279	1.0422	1.5089	1.9569	0.9187	1.3448	10.1150	0.9407	1.8264	2.8643	1.8229
2001	1.7818	14.5115	1.8268	0.8424	0.8277	1.5684	1.1027	1.0907	1.5308	1.8076	1.0313	1.3291	10.2142	1.0858	1.5803	2.0381	1.2260
2002	1.7109	14.5099	1.7731	0.9588	0.7810	1.6001	1.0220	0.9664	1.6316	1.6231	1.0510	1.2679	11.0949	1.1765	1.4986	2.7493	1.0818
2003	1.6002	13.7964	1.5878	0.9135	0.7502	1.5308	1.0282	0.7949	1.3874	1.4336	0.9705	1.3312	12.0589	0.9403	1.5711	2.7393	1.0277
2004	1.5730	14.9109	1.4779	0.9094	0.6298	1.4140	1.0280	0.7926	1.0926	1.4958	1.0233	1.6090	11.1983	0.9450	1.7015	1.8442	0.9033
2005	1.4415	14.5328	1.4852	0.9894	0.6762	1.2874	1.0572	0.8862	0.9052	1.6736	1.0332	1.5302	11.2986	0.9607	1.7404	1.3278	1.0000
2006	1.4305	14.0507	1.5197	0.9694	0.7186	1.2556	1.0278	1.0079	1.0382	1.6483	1.0995	1.6162	11.2882	0.9393	1.6628	1.7943	1.3582
2007	1.5290	16.5236	1.6471	1.1097	0.7685	1.3231	0.9842	1.1955	1.3293	1.8693	1.1562	1.7698	12.0735	1.1029	1.6807	2.1389	1.4102
2008	1.6575	18.4995	1.7708	1.2324	0.9496	1.3911	1.3710	1.2393	1.5071	2.2181	1.6364	1.6617	11.4960	1.2707	1.7290	1.5449	1.1146
2009	1.7164	15.0360	1.7107	1.0814	0.9540	1.4358	1.9362	1.2019	1.6081	2.1586	2.2640	1.5415	10.8713	0.8521	1.5673	1.7762	1.0020
2010	1.7886	16.4971	1.6101	1.6565	1.2591	1.3786	2.7973	1.2702	1.4222	2.2735	3.2715	1.5044	10.5479	1.0490	2.0926	2.8407	1.0522
2011	1.9361	11.7901	1.5623	2.4782	1.0794	1.3961	3.8919	2.0075	1.2007	2.4088	5.5386	1.6903	10.6628	0.7160	1.7733	1.7548	1.0352

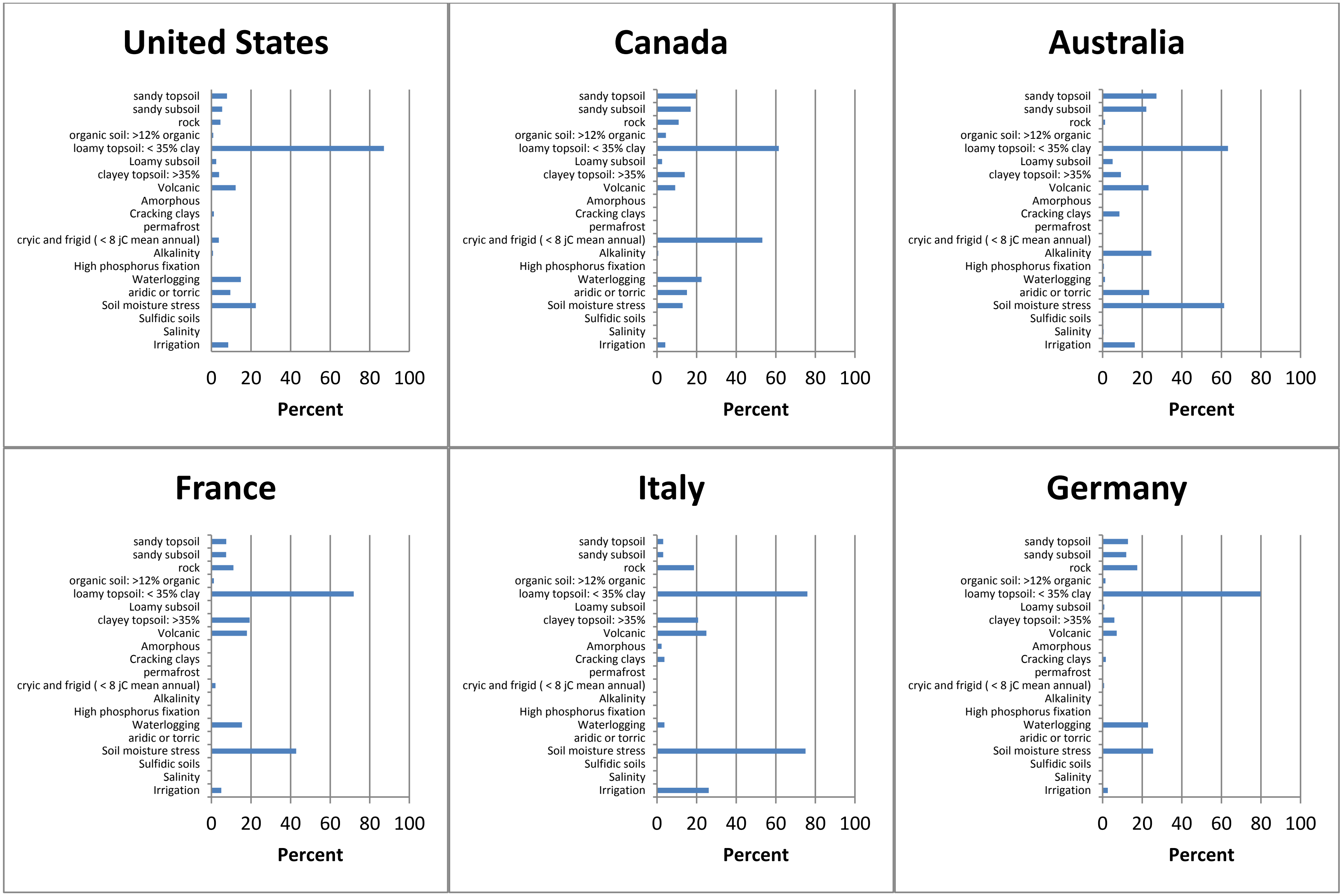
Table 8. Prices of Capital Input Relative to U.S. in 2005

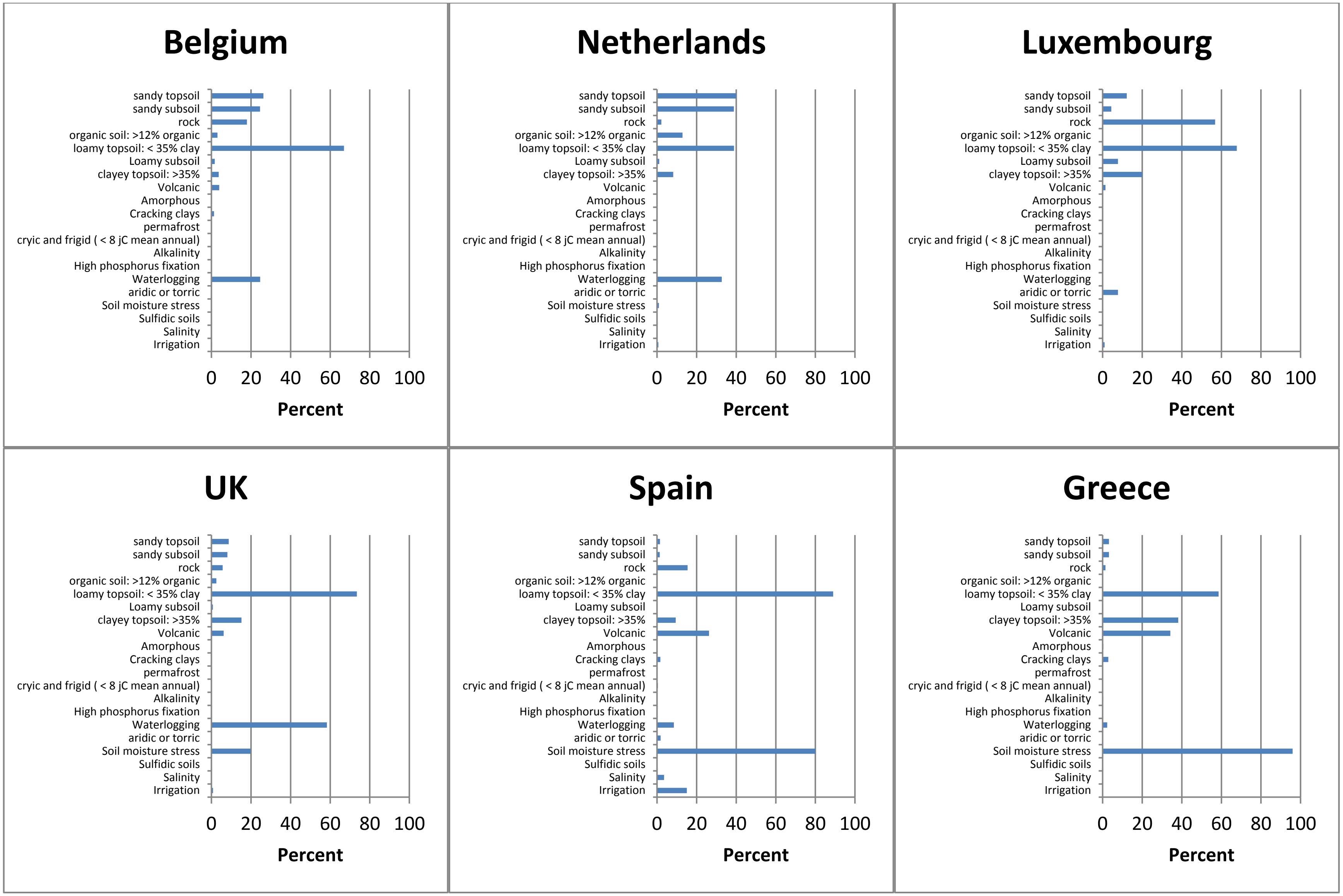
Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-burg	NL	Portugal	Finland	Sweden	UK	Australia	Canada	US
1973	0.3823	0.1856	0.3461	0.3650	0.3852	0.3589	0.4316	0.4337	0.2504	0.2621	0.2138	0.2833	0.3995	0.6425	0.2815	0.4763	0.3982
1974	0.4649	0.3795	0.4110	0.5543	0.5050	0.4055	0.7586	0.5290	0.2396	0.3337	0.2547	0.3718	0.4161	0.7247	0.3169	0.5299	0.3957
1975	0.5532	0.3478	0.4025	0.5578	0.3981	0.5523	0.9893	0.5192	0.2730	0.3652	0.2407	0.4057	0.5170	0.7415	0.3112	0.5232	0.3180
1976	0.5430	0.3113	0.3338	0.5202	0.3598	0.5147	0.9781	0.4229	0.2908	0.3549	0.1956	0.4958	0.5181	0.6127	0.3190	0.5827	0.3198
1977	0.5654	0.3549	0.3208	0.5531	0.3237	0.4960	0.8882	0.4097	0.3891	0.3977	0.2027	0.6023	0.5241	0.4167	0.3167	0.4947	0.6382
1978	0.5933	0.5601	0.3479	0.6249	0.4192	0.5420	0.7375	0.3687	0.4316	0.4744	0.2610	0.7488	0.5469	0.3257	0.3566	0.5677	0.6261
1979	0.7401	0.8337	0.5180	0.7825	0.4647	0.5710	0.7256	0.3758	0.4891	0.5396	0.2536	0.9751	0.6160	0.4081	0.3782	0.6983	0.8068
1980	1.2066	0.9529	0.8164	1.0835	0.5601	0.6243	0.5846	0.5885	0.5315	0.6532	0.3095	1.3428	0.7405	0.5026	0.4219	1.0323	1.0504
1981	1.4144	0.8997	1.0049	1.2807	0.3633	0.6655	0.5815	0.5535	0.4676	0.6581	0.3239	1.4189	0.8116	0.4681	0.5457	1.5160	1.5687
1982	1.3848	1.0273	1.0578	1.3119	0.3914	0.7551	0.5547	0.5444	0.4756	0.7024	0.4069	1.3490	0.7107	0.4331	0.6480	1.3724	1.4567
1983	1.1849	0.7655	0.9965	1.0418	0.4414	0.7469	0.4472	0.5071	0.4349	0.6835	0.5046	1.1654	0.6348	0.3903	0.5512	1.0929	1.5944
1984	1.0835	0.6530	0.8888	0.8282	0.4396	0.6528	0.4320	0.4445	0.4105	0.5884	0.5222	1.2100	0.6417	0.4771	0.5548	1.3986	1.7026
1985	1.0674	0.5490	0.9016	0.6545	0.3990	0.6171	0.4346	0.4101	0.4258	0.6176	0.3946	1.2722	0.6494	0.6222	0.5969	1.3258	1.4510
1986	1.2976	0.8544	1.2002	0.7556	0.5268	0.7916	0.4975	0.5630	0.5744	0.9923	0.5889	1.5335	0.7597	0.6445	0.7246	1.2002	1.0227
1987	1.5005	1.4989	1.4022	0.9951	0.6757	1.0283	0.5353	0.7268	0.7688	1.3517	0.8001	1.9044	0.8687	0.8959	0.8989	1.3853	1.1822
1988	1.5989	1.5222	1.5204	1.1738	0.9581	1.2037	0.6521	0.7750	0.8337	1.6385	0.7828	2.2050	0.9565	0.9833	1.1028	1.4418	1.1610
1989	1.7015	1.5739	1.5541	1.2930	1.3099	1.2923	0.7663	1.0795	0.9222	1.7191	0.8774	2.3797	1.0395	0.9757	1.2197	1.6313	1.1666
1990	2.1044	1.8937	2.0745	1.5941	1.9723	1.8093	1.0612	1.4468	1.4658	2.2897	0.9618	2.9583	1.3389	1.2436	1.2119	1.9068	1.1947
1991	2.1754	1.6166	2.2837	1.9008	1.8140	1.9201	1.0689	1.4554	1.5464	2.4757	0.9083	2.8688	1.3127	0.8269	1.1515	1.8863	1.0525
1992	2.3701	1.9411	2.4760	2.0496	1.7411	2.1185	1.4239	1.7360	1.8750	2.6293	0.8371	2.2364	1.2789	0.8678	1.1081	1.7140	0.9008
1993	1.9911	1.7890	2.0314	1.9916	1.1340	1.8373	1.3228	1.4933	1.5620	2.2803	0.6294	1.5355	0.8663	0.7651	1.0133	1.6747	0.9107
1994	1.8999	2.0895	1.8965	2.0268	1.0568	1.8378	1.2307	1.5333	1.4912	2.2235	0.8664	1.6962	1.0238	1.0353	1.2615	1.7112	1.2606
1995	2.2547	2.5007	2.1794	2.0740	1.6000	2.1314	1.5937	1.7753	1.7910	2.6056	1.3703	2.1374	1.4407	1.6167	1.4654	1.8347	1.3040
1996	2.0855	2.5864	2.1191	1.9164	1.5250	2.0248	1.6574	1.9325	1.7386	2.4052	1.6569	1.3908	1.5860	1.8601	1.4861	1.6224	1.3302
1997	1.8760	2.1365	1.8721	1.3385	0.9482	1.7251	1.5899	1.5404	1.3855	2.0361	1.5775	1.4674	1.3464	1.7350	1.3021	1.6579	1.5826
1998	1.8378	1.9781	1.7987	1.1648	0.6718	1.5831	1.3887	0.9474	1.2773	1.6615	1.2437	1.3065	1.1822	1.5840	1.0208	1.7078	1.3845
1999	1.8783	1.9268	1.6818	1.1634	0.5396	1.5049	1.2202	0.8817	1.3631	1.7080	0.9017	1.0966	1.1162	1.4607	1.1010	2.1483	1.6914
2000	1.6762	1.8212	1.5571	0.9182	0.5562	1.3810	1.0386	0.9603	1.3904	1.8033	0.8465	1.2381	1.1040	1.4233	1.0589	1.9287	1.8229
2001	1.5942	1.7422	1.6357	0.7537	0.7405	1.4032	0.9868	0.9758	1.3696	1.6173	0.9227	1.1892	0.9889	1.5631	0.8174	1.3159	1.2260
2002	1.6120	1.8405	1.6706	0.9035	0.7359	1.5076	0.9631	0.9106	1.5374	1.5293	0.9903	1.1947	1.1394	1.7633	0.8142	1.7519	1.0818
2003	1.8074	2.0976	1.7934	1.0318	0.8474	1.7291	1.1616	0.8979	1.5670	1.6192	1.0962	1.5036	1.4913	1.5352	1.0189	1.9551	1.0277
2004	1.9544	2.4900	1.8362	1.1299	0.7826	1.7568	1.2774	0.9847	1.3575	1.8585	1.2715	1.9991	1.5238	1.7302	1.2514	1.4175	0.9033
2005	1.7914	2.4238	1.8456	1.2294	0.8402	1.5997	1.3138	1.1011	1.1249	2.0796	1.2839	1.9015	1.5119	1.7468	1.3291	1.0958	1.0000
2006	1.7952	2.3643	1.9070	1.2165	0.9017	1.5756	1.2898	1.2648	1.3028	2.0683	1.3797	2.0281	1.5299	1.7283	1.2522	1.5818	1.3582
2007	2.0927	3.0354	2.2543	1.5188	1.0519	1.8109	1.3470	1.6362	1.8194	2.5584	1.5824	2.4222	1.7864	2.2068	1.4064	1.9914	1.4102
2008	2.4279	3.6311	2.5940	1.8052	1.3910	2.0377	2.0083	1.8153	2.2076	3.2491	2.3970	2.4341	1.7442	2.3360	1.4503	1.4478	1.1146
2009	2.3844	2.8060	2.3765	1.5022	1.3253	1.9946	2.6897	1.6697	2.2339	2.9987	3.1451	2.1414	1.4204	1.3274	1.2223	1.5539	1.0020
2010	2.3688	2.9133	2.1324	2.1939	1.6676	1.8258	3.7048	1.6823	1.8836	3.0111	4.3328	1.9925	1.4634	1.6209	1.9162	2.7575	1.0522
2011	2.6914	2.2006	2.1719	3.4451	1.5005	1.9408	5.4103	2.7907	1.6691	3.3485	7.6994	2.3498	1.6421	1.1472	1.8292	1.7734	1.0352

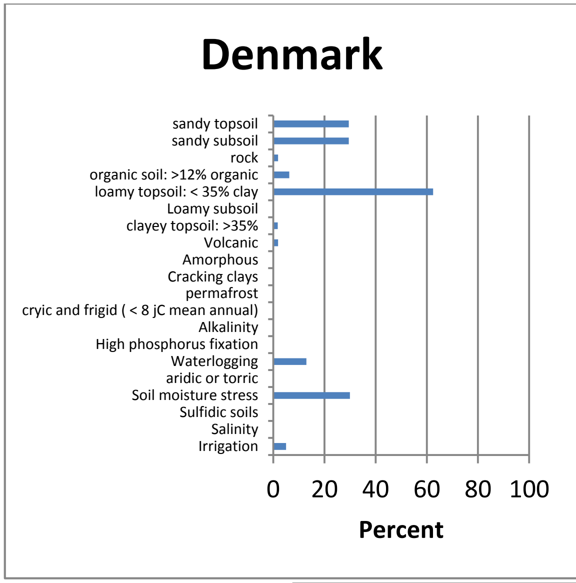
Table 9. Capital Input (Millions of 2005 U.S. Dollars)

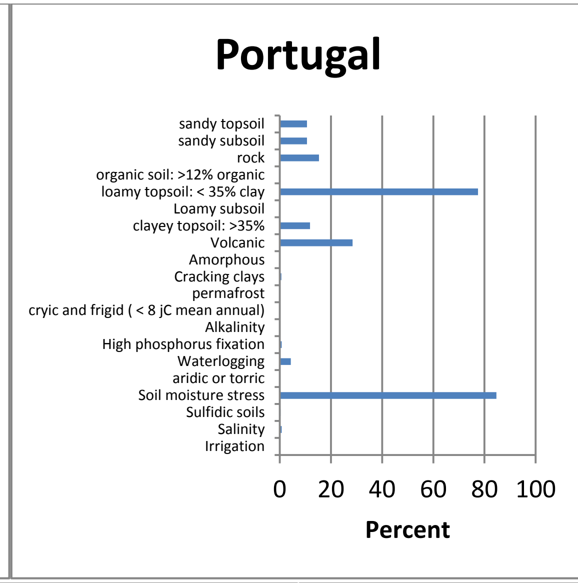
Year	Belgium	Denmark	Germany	Greece	Spain	France	Ireland	Italy	Luxem-burg	NL	Portugal	Finland	Sweden	UK	Australia	Canada	US
1973	648	1132	11382	1814	5039	7521	970	9989	89	1286	714	1169	1108	4436	5917	2704	33147
1974	678	1191	11488	1846	5097	7811	999	10099	91	1383	762	1174	1094	4497	6102	2861	34002
1975	705	1252	11511	1881	5088	8087	985	10119	93	1472	820	1184	1091	4583	6265	3048	35055
1976	710	1319	11554	1950	5119	8297	990	10225	94	1526	884	1197	1103	4587	6441	3294	35782
1977	720	1394	11650	2010	5165	8511	1010	10413	94	1589	932	1210	1120	4538	6663	3602	35424
1978	737	1445	11839	2067	5226	8674	1032	10644	92	1706	986	1219	1121	4651	6856	3809	35942
1979	763	1497	11773	2083	5328	8890	1063	10935	93	1848	1020	1224	1111	4698	7067	3998	36580
1980	769	1541	11850	2154	5437	9095	1097	10943	93	1976	1060	1232	1101	4725	7341	4187	37144
1981	765	1550	11866	2215	5686	9239	1122	11065	93	2038	1095	1250	1077	4683	7384	4269	37027
1982	758	1540	11809	2237	5796	9345	1154	11103	92	2082	1121	1266	1056	4663	7534	4292	36651
1983	755	1528	11751	2261	5865	9460	1169	11123	93	2127	1121	1290	1041	4693	7653	4249	35894
1984	749	1525	11745	2260	5927	9521	1170	11118	94	2195	1120	1286	1029	4682	7779	4158	35148
1985	744	1526	11702	2254	5984	9568	1168	11116	93	2224	1108	1323	1024	4751	7909	4077	34360
1986	738	1540	11659	2268	5987	9577	1160	11113	92	2249	1092	1332	1007	4783	7983	3929	33169
1987	736	1551	11599	2183	6018	9532	1152	11108	90	2254	1088	1325	983	4756	8005	3769	31857
1988	734	1550	11535	2077	6029	9492	1139	11112	89	2271	1103	1332	963	4731	8026	3614	30955
1989	730	1539	11501	1994	5992	9476	1133	11151	88	2282	1164	1337	951	4691	8090	3462	30170
1990	726	1545	12278	1935	5929	9525	1141	11177	88	2305	1209	1321	946	4672	8159	3329	29579
1991	724	1543	12185	1865	5815	9547	1148	11163	88	2325	1193	1349	933	4666	8172	3197	29110
1992	715	1533	12183	1803	5749	9540	1146	11128	89	2344	1175	1339	907	4605	8142	3086	28492
1993	718	1492	12211	1754	5610	9486	1142	11067	89	2365	1162	1293	878	4563	8121	2989	27798
1994	711	1444	12147	1686	5466	9404	1137	10963	89	2348	1127	1256	849	4572	8077	2951	27254
1995	699	1446	12044	1629	5339	9357	1145	10894	89	2327	1104	1229	833	4591	8058	2912	26863
1996	690	1453	11939	1589	5259	9355	1148	10823	87	2317	1080	1198	819	4626	8100	2889	26467
1997	684	1466	11855	1561	5261	9393	1167	10776	87	2297	1066	1189	807	4642	8147	2863	26224
1998	681	1475	11788	1544	5250	9456	1168	10759	86	2296	1057	1192	798	4623	8220	2890	26088
1999	679	1460	11645	1544	5263	9549	1172	10744	85	2294	1047	1192	789	4556	8348	2929	26014
2000	678	1459	11587	1565	5221	9650	1172	10734	83	2306	1050	1199	785	4450	8454	2920	25845
2001	677	1471	11554	1609	5210	9715	1169	10760	82	2311	1052	1202	795	4420	8533	2915	25710
2002	679	1484	11481	1609	5207	9761	1164	10769	81	2335	1054	1206	803	4388	8598	2888	25718
2003	682	1486	11475	1642	5227	9788	1160	10879	80	2330	1054	1215	815	4345	8683	2882	25759
2004	684	1495	11410	1694	5270	9826	1153	10973	81	2335	1053	1227	823	4324	8816	2876	26048
2005	686	1514	11346	1727	5348	9888	1153	11130	83	2332	1056	1225	831	4327	8922	2903	26590
2006	690	1525	11199	1785	5336	9932	1150	11204	83	2324	1052	1240	833	4349	9054	2864	26714
2007	700	1527	11138	1820	5369	9981	1157	11256	83	2331	1047	1237	837	4331	9202	2829	26552
2008	721	1557	11115	1890	5436	10086	1199	11259	83	2373	1045	1230	849	4361	9295	2871	26695
2009	723	1560	11184	1965	5500	10227	1226	11386	84	2414	1043	1229	867	4373	9480	2903	27290
2010	743	1554	11081	1972	5562	10250	1211	11337	85	2411	1039	1248	873	4411	9706	2927	27217
2011	759	1544	11019	1981	5583	10184	1198	11272	86	2418	1036	1232	877	4459	9943	2987	27286

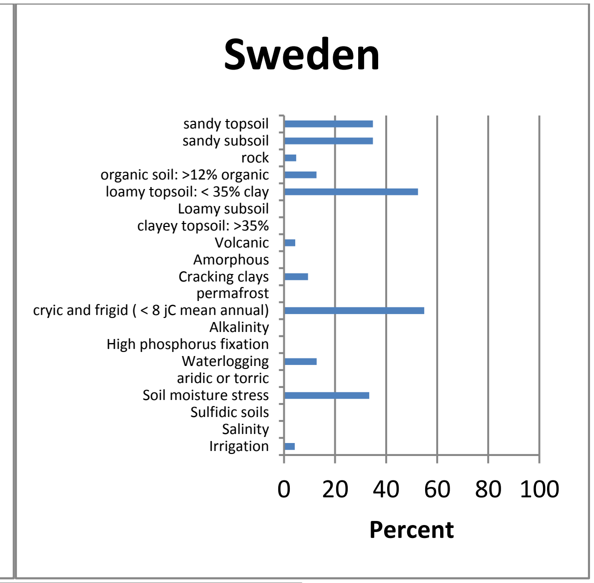
Figure 1. Levels of Land Attributes.

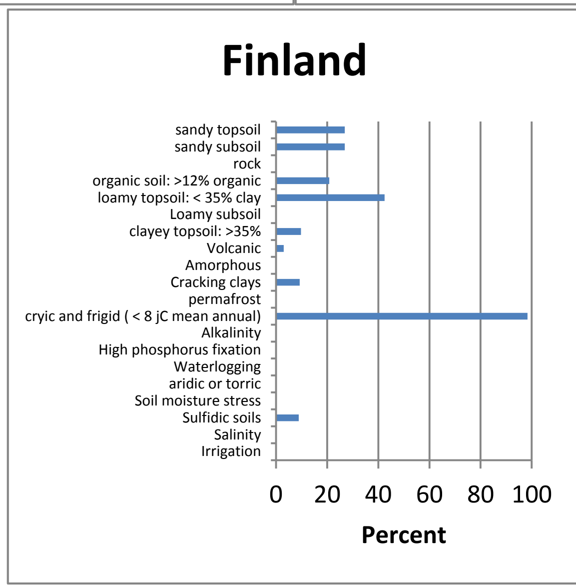



Belgium
Netherlands
Luxembourg
UK
Spain
Greece
sandy topsoil
sandy subsoil
rock
organic soil: >12% organic
loamy topsoil: < 35% clay
Loamy subsoil
clayey topsoil: >35%
Volcanic
Amorphous
Cracking clays
permafrost
cryic and frigid (< 8 jC mean annual)
Alkalinity
High phosphorus fixation
Waterlogging
aridic or torric
Soil moisture stress
Sulfidic soils
Salinity
Irrigation
0
20
40
60
80
100
Percent


Denmark
sandy topsoil
sandy subsoil
rock
organic soil: >12% organic
loamy topsoil: < 35% clay
Loamy subsoil
clayey topsoil: >35%
Volcanic
Amorphous
Cracking clays
permafrost
cryic and frigid (< 8 jC mean annual)
Alkalinity
High phosphorus fixation
Waterlogging
aridic or torric
Soil moisture stress
Sulfidic soils
Salinity
Irrigation
0 20 40 60 80 100
Percent


Portugal
sandy topsoil
sandy subsoil
rock
organic soil: >12% organic
loamy topsoil: < 35% clay
Loamy subsoil
clayey topsoil: >35%
Volcanic
Amorphous
Cracking clays
permafrost
cryic and frigid (< 8 jC mean annual)
Alkalinity
High phosphorus fixation
Waterlogging
aridic or torric
Soil moisture stress
Sulfidic soils
Salinity
Irrigation
0 20 40 60 80 100
Percent


Sweden
sandy topsoil
sandy subsoil
rock
organic soil: >12% organic
loamy topsoil: < 35% clay
Loamy subsoil
clayey topsoil: >35%
Volcanic
Amorphous
Cracking clays
permafrost
cryic and frigid (< 8 jC mean annual)
Alkalinity
High phosphorus fixation
Waterlogging
aridic or torric
Soil moisture stress
Sulfidic soils
Salinity
Irrigation
0 20 40 60 80 100
Percent


Finland
sandy topsoil
sandy subsoil
rock
organic soil: >12% organic
loamy topsoil: < 35% clay
Loamy subsoil
clayey topsoil: >35%
Volcanic
Amorphous
Cracking clays
permafrost
cryic and frigid (< 8 jC mean annual)
Alkalinity
High phosphorus fixation
Waterlogging
aridic or torric
Soil moisture stress
Sulfidic soils
Salinity
Irrigation
0 20 40 60 80 100
Percent

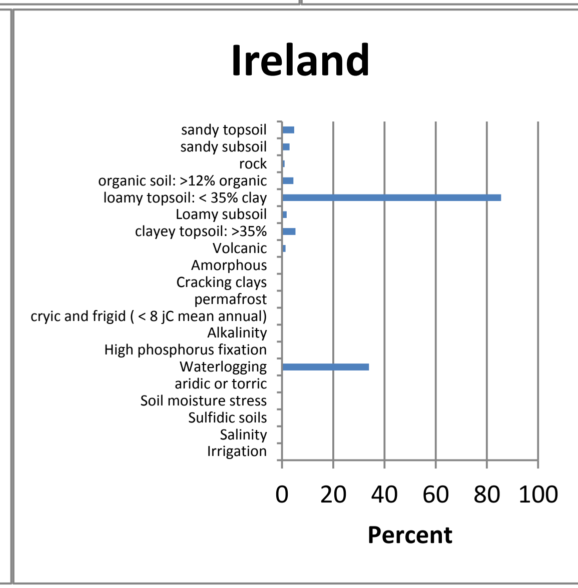

Ireland
sandy topsoil
sandy subsoil
rock
organic soil: >12% organic
loamy topsoil: < 35% clay
Loamy subsoil
clayey topsoil: >35%
Volcanic
Amorphous
Cracking clays
permafrost
cryic and frigid (< 8 jC mean annual)
Alkalinity
High phosphorus fixation
Waterlogging
aridic or torric
Soil moisture stress
Sulfidic soils
Salinity
Irrigation
0 20 40 60 80 100
Percent

Figure 2. Trends of Differences in Relative Capital Input Prices Denominated in Dollars

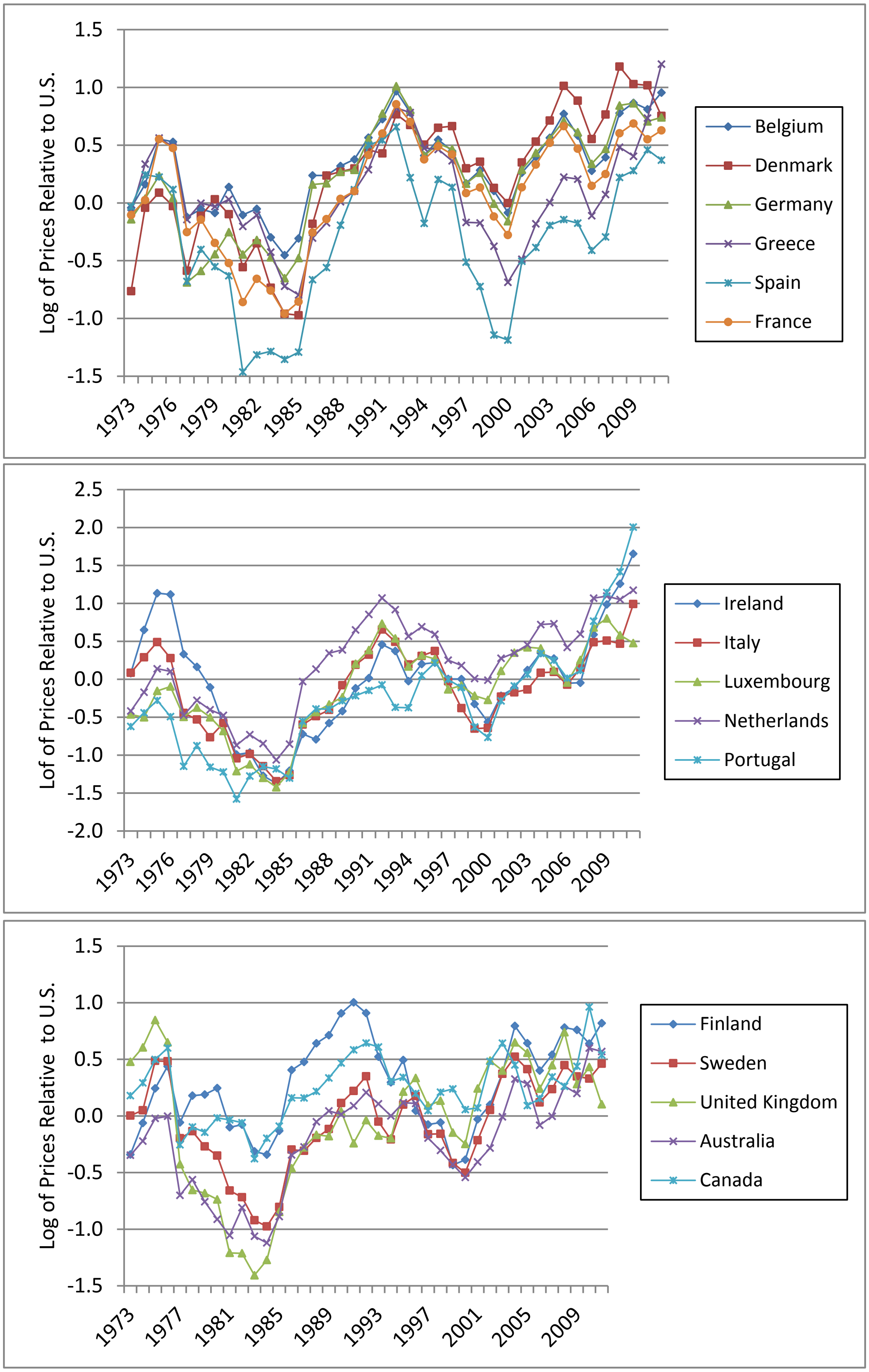


Figure 3. Trends of Differences in Relative Capital Input Denominated in U.S. Dollars