



Memòria justificativa de recerca de les convocatòries BCC, BE, BP, CTP-AIRE, DEBEQ, FI, INEFC, NANOS i PIV

La memòria justificativa consta de les dues parts que venen a continuació:

- 1.- Dades bàsiques i resums
- 2.- Memòria del treball (informe científic)

Tots els camps són obligatoris

1.- Dades bàsiques i resums

Nom de la convocatòria

BE

Llegenda per a les convocatòries:

BCC	Convocatòria de beques per a joves membres de comunitats catalanes a l'exterior
BE	Beques per a estades per a la recerca fora de Catalunya
BP	Convocatòria d'ajuts postdoctorals dins del programa Beatriu de Pinós
CTP-AIRE	Ajuts per accions de cooperació en el marc de la comunitat de treball dels Pirineus. Ajuts de mobilitat de personal investigador.
DEBEQ (Modalitat A3)	Beques de Cooperació Internacional i Desenvolupament
FI	Beques predoctorals per a la formació de personal investigador
INEFC	Beques predoctorals i de col·laboració, dins de l'àmbit de l'educació física i l'esport i les ciències aplicades a l'esport
NANOS	Beques de recerca per a la formació en el camp de les nanotecnologies
PIV	Beques de recerca per a professors i investigadors visitants a Catalunya

Títol del projecte: ha de sintetitzar la temàtica científica del vostre document.

Títol: Organizational Form and Business Performance

Subtítol: Profitability Change: Its Generation and its Distribution

Dades de l'investigador o beneficiari

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Número d'expedient

2007 BE-110062

Paraules clau: cal que esmenteu cinc conceptes que defineixin el contingut de la vostra memòria.
organització empreses, eficiència, productivitat, rendibilitat, números índexs, generació rendibilitat, distribució rendibilitat.

Data de presentació de la justificació

28.01.08

Nom i cognoms i signatura

del/de la investigador/a

Vistiplau del/ de la responsable de la sol·licitud





Resum del projecte: cal adjuntar dos resums del document, l'un en anglès i l'altre en la llengua del document, on s'esmenti la durada de l'acció

Resum en la llengua del projecte (màxim 300 paraules)

This project deals with the generation of profitability and the distribution of its benefits. Inspired by Davis (1947, 1955), we define profitability as the ratio of revenue to cost. Profitability is not as popular a measure of business financial performance as profit, the difference between revenue and cost. Regardless of its popularity, however, profitability is surely a useful financial performance measure. Our primary objective in this project is to identify the factors that generate change in profitability. One set of factors, which we refer to as sources, consists of changes in quantities and prices of outputs and inputs. Individual quantity changes aggregate to the overall impact of quantity change on profitability change, which we call productivity change. Individual price changes aggregate to the overall impact of price change on profitability change, which we call price recovery change. In this framework profitability change consists exclusively of productivity change and price recovery change. A second set of factors, which we refer to as drivers, consists of phenomena such as technical change, change in the efficiency of resource allocation, and the impact of economies of scale. The ability of management to harness these factors drives productivity change, which is one component of profitability change. Thus the term sources refers to quantities and prices of individual outputs and inputs, whose changes influence productivity change or price recovery change, either of which influences profitability change. The term drivers refers to phenomena related to technology and management that influence productivity change (but not price recovery change), and hence profitability change.

Resum en anglès (màxim 300 paraules)

This project deals with the generation of profitability and the distribution of its benefits. Inspired by Davis (1947, 1955), we define profitability as the ratio of revenue to cost. Profitability is not as popular a measure of business financial performance as profit, the difference between revenue and cost. Regardless of its popularity, however, profitability is surely a useful financial performance measure. Our primary objective in this project is to identify the factors that generate change in profitability. One set of factors, which we refer to as sources, consists of changes in quantities and prices of outputs and inputs. Individual quantity changes aggregate to the overall impact of quantity change on profitability change, which we call productivity change. Individual price changes aggregate to the overall impact of price change on profitability change, which we call price recovery change. In this framework profitability change consists exclusively of productivity change and price recovery change. A second set of factors, which we refer to as drivers, consists of phenomena such as technical change, change in the efficiency of resource allocation, and the impact of economies of scale. The ability of management to harness these factors drives productivity change, which is one component of profitability change. Thus the term sources refers to quantities and prices of individual outputs and inputs, whose changes influence productivity change or price recovery change, eit



Resum en anglès (màxim 300 paraules) – continuació -.

2.- Memòria del treball (informe científic sense limitació de paraules). Pot incloure altres fitxers de qualsevol mena, no més grans de 10 MB cadascun d'ells.

Title: Organizational Form and Business Performance

Subtitle: Profitability Change: Its Generation and its Distribution

This project deals with the generation of profitability and the distribution of its benefits. Inspired by Davis (1947, 1955), we define profitability as the ratio of revenue to cost, and for the time being we avoid the task of defining cost precisely. Profitability is not as popular a measure of business financial performance as profit, the difference between revenue and cost. Regardless of its popularity, however, profitability is surely a useful financial performance measure.

Our primary objective is to identify the factors that generate change in profitability. One set of factors, which we refer to as *sources*, consists of changes in quantities and prices of outputs and inputs. Individual quantity changes aggregate to the overall impact of quantity change on profitability change, which we call *productivity change*. Individual price changes aggregate to the overall impact of price change on profitability change, which we call *price recovery change*. In this framework profitability change consists exclusively of productivity change and price recovery change. A second set of factors, which we refer to as *drivers*, consists of phenomena such as technical change, change in the efficiency of resource allocation, and the impact of economies of scale. The ability of management to harness these factors drives productivity change, which is one component of profitability change. Thus the term *sources* refers to quantities and prices of individual outputs and inputs, whose changes influence productivity change or price recovery change, either of which influences profitability change. The term *drivers* refers to phenomena related to technology and management that influence productivity change (but not price recovery change), and hence profitability change.



Our second objective is to identify the *recipients* of the financial benefits of productivity change. Among the potential claimants to these benefits are consumers, resource suppliers including labor, and owners of the enterprise. Thus the sources of productivity change are changes in quantities of outputs and inputs, and the recipients of the financial benefits of productivity change are those agents paying or receiving changes in prices of individual outputs and inputs.

We stress that we are by no means suggesting that firms seek to maximize profitability. We do not assign an objective to firms because our analysis does not require that we do so. We treat profitability not as a business objective, but as an indicator of financial health, an indicator, we might add, that is widely used. We attribute change in profitability to change in productivity and change in price recovery. We analyze both sources and drivers of productivity change, and we identify the recipients of the financial benefits of productivity change. We begin by using theoretical index numbers, and we quickly turn to empirical index numbers to achieve our objectives. In Section 2.2 we review some early studies that exploit the concept of profitability. In Section 2.3 we provide background material on theoretical index numbers, which decompose value change (in this case revenue change and cost change) into quantity change and price change. In Section 2.4 we develop empirical index numbers as approximations to their theoretical counterparts. In Section 2.5 we discuss empirical estimation of theoretical index numbers as an alternative to the use of empirical index numbers. In Section 2.6 we combine approximation with estimation. In Section 2.7 we reinterpret the price recovery term as describing the distribution of the fruits of productivity change to individual agents paying or receiving the price changes. This reinterpretation enables us to analyze the distribution of the financial benefits of productivity change. In Section 2.8 we reorganize the basic “profitability change equals productivity change times price recovery change” expression. This reorganization generates a series of alternative expressions for productivity change. In Section 2.9 we examine a special case of the relationship linking profitability change to productivity change and price recovery change. In this special case profitability is constant, so there is no change in profitability to be explained. However this also implies that productivity change and price recovery change are reciprocally related. This offers an alternative way of measuring productivity change, as the reciprocal of price recovery change. Because it uses price changes instead of quantity changes, we refer to it as a dual productivity index. Section 2.10 provides a brief guide to the literature.

There is good reason to discuss two alternative approaches to the empirical approximation to theoretical index numbers in Sections 2.4 and 2.5: the two approaches are complementary. Theoretical index numbers are appropriate for analyzing the economic drivers of the productivity change component of profitability change. They are not appropriate for analyzing the individual variables responsible for either component of profitability change. Conversely, empirical index numbers are appropriate for analyzing the generation and distribution of profitability by *individual and aggregate quantity and price variables*. However they are not well suited to the decomposition of productivity change by *economic driver*. The economic drivers of productivity change (technical change, efficiency change, and scale economies) are not directly observed in the data, and efforts limited to empirical index numbers to identify the economic drivers of productivity change have not proved very successful. We replace empirical index numbers with empirical estimates of theoretical productivity indexes, and also with the economic theory of production, to identify the economic drivers of productivity change, and hence of profitability change.

Figure 2.1 illustrates the basic ideas. Reading across the top row identifies the two sources of revenue change, and reading across the bottom row identifies the two sources of cost change. The resulting middle column identifies revenue change



and cost change as one pair of sources of profitability change. An alternative approach reads down columns. Reading down the left column identifies the two sources of productivity change, and reading down the right column identifies the two sources of price recovery change. The resulting middle row identifies productivity change and price recovery change as an alternative pair of sources of profitability change.

References:

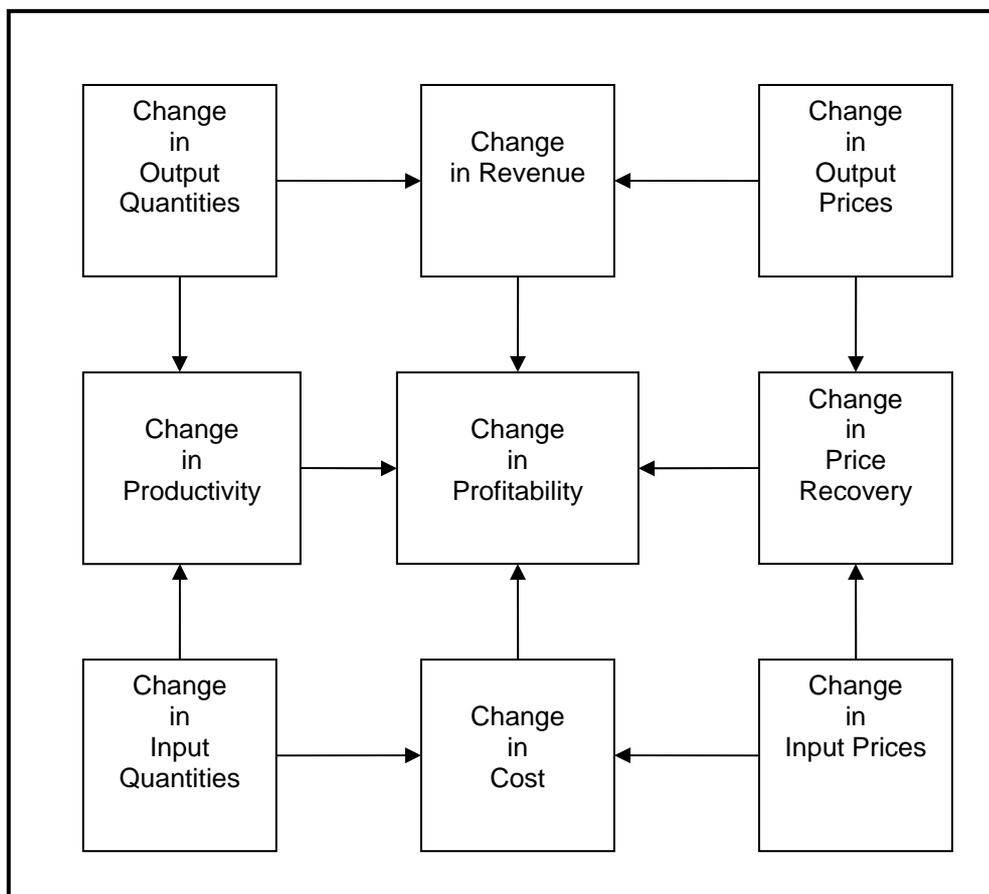
Davis, H. S. (1947), *The Industrial Study of Economic Progress*. Philadelphia: University of Pennsylvania Press.

Davis, H. S. (1955, 1978), *Productivity Accounting*. Philadelphia: University of Pennsylvania Press.

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- 2.10 A Guide to the Literature





Source: adapted from van Loggerenberg & Cucchiaro (1981-82)

Figure 2.1. Alternative Sources of Change in Profitability