

CrossRef DOI of original article:

# Joint Costs: Evaluation Problems and Solutions

Prof. Maria Silvia Avi

Received: 1 January 1970 Accepted: 1 January 1970 Published: 1 January 1970

---

## Abstract

Joint production is a particular type of production process that has as its output a plurality of goods that cannot separate. The production of one good also implies the production of the other goods output from the process. The joint production type poses two major valuation problems: the determination of the cost of the products obtained from joint production and the valuation of the inventories of these goods. The difficulties arise primarily because it is impossible to objectively allocate the common costs of the production process to the various products obtained from joint production. It will address these issues by analysing the hypothesis of joint costs that may occur following a block sale of tangible fixed assets at a lump sum price. When this hypothesis occurs, the problem arises of identifying the value of the individual

---

**Index terms**— joint costs, joint production, valuation of closing inventories of joint products, bulk purchase and sale of tangible fixed assets: valuation issues.

## 1 1) Joint Costs and Common Costs: Preliminary Remarks

The analysis of joint costs presupposes a prior clarification of the difference between common costs and joint costs.

For the accounting-decision-making tools to be fully understood, it is first necessary to illustrate the concept of common costs and their difference from special costs.

Company costs are defined as special (or specific) if they can be allocated objectively and thus without the need for questionable attributions to a particular company department/product.

An example is the labour costs of a department head or the depreciation of a machine used in a specific responsibility centre. Such costs are special to that centre. For such factors of production, the theoretical problem of allocation does not arise. It is evident how, since the elements are used in a particular department /centre, the cost of the factor must be allocated to that specific user centre.

While there are many costs specifically referable to a particular department/product of the company, there are numerous negative income components that, on the other hand, relate to several departments /products. These costs are termed common costs in that they affect, at the same time, a diversity of objects. Common costs are subdivided, in turn, into specialisable and non-specialisable costs. The first mentioned category consists of costs which, although lacking a direct connection to departments/products, are attributable to the various objects of interest through sufficiently objective parameters. Consider, for example, the case of energy. If by hypothesis, counters were installed in the company, which allow the exact amount of input consumed by the various departments to be determined, the cost associated with energy consumption could be included in the specialised costs. However, numerous examples of negative income components are attributable to the various departments only as a result of the use of subjective and thus questionable parameters. The depreciation of a building, the general manager's salary, advertising, voluntary insurance, the cost of a plant manager, etc., are typical examples of such costs. The allocation of these income elements to specific departments and/or products could only occur by resorting to subjective criteria. These costs are, therefore, part of the so-called non-specialisable common costs, i.e. in the category of costs which, regardless of more or less discretionary 'rebates', cannot be apportioned precisely between the various company areas as they concern the company considered in its entirety and wholeness. The reader is referred to for a practical and theoretical illustration of the allocation of common costs in the following paragraphs.

## 2 2) JOINT COSTS RELATING TO THE SALE/PURCHASE OF TANGIBLE FIXED ASSETS

---

47 To conclude these brief considerations, it should point out that the division between special and common costs  
48 is relative in that it strictly depends on the object under consideration. It is evident that as the size of the object  
49 increases, the amount of special costs also increase proportionally against a corresponding reduction in common  
50 costs. This implies that a cost that identifies a special negative income component for an object may become  
51 common if the analysis perspective is changed. If, for example, the reference object were the entire company,  
52 each cost would become special and, consequently, cancel the common cost category.

53 In addition, common corporate costs are characterised by the peculiarity that such costs are divisible in the  
54 sense that they can eliminate the common cost, e.g. by removing an asset produced by the company, without  
55 other assets being affected by this decision.

56 On the other hand, joint costs in the production sphere are costs that cannot stop the production of a single  
57 good without also stopping that of different goods that are, precisely, joint with the first one. The goods are  
58 thus simultaneously obtained from the same production process. Instead of only one good or several goods that  
59 can separate at the level of cost allocation, a set of products emerges whose cost is interconnected, i.e. affects  
60 each good simultaneously. In the case of joint products, it is therefore impossible to limit, modify or even stop  
61 the production of a single product without having a direct impact on the joint products, which will cease to be  
62 produced when joint production is stopped.

63 The difference between joint production and joint costs must be well understood to determine the correct  
64 product cost. Misunderstanding these costs inevitably leads to incorrect and misleading product costing.

## 65 2 2) Joint Costs Relating to the Sale/Purchase of Tangible 66 Fixed Assets

67 This hypothesis occurs when an enterprise acquires a differentiated set of assets, usually multi-year investments,  
68 at a price determined as "a lump sum".

69 Specific identification only concerns the common cost determined by accounting support (purchase invoice or  
70 other documents).

71 In Italy, civil law requires, in Art. 2423 bis, item no. 5, those heterogeneous elements included in individual  
72 items must be valued separately.

73 Although this operative principle does not directly concern the issue of joint assets purchased at an overall  
74 determining cost, indirectly, it is helpful for understanding the rationale that obligatorily requires the separation  
75 of the joint cost between the various assets purchased.

76 Mainly if the assets subject to the purchase agreement are of a multi-year nature, the identification of the cost  
77 attributable to the individual asset becomes indispensable to correctly calculate the annual depreciation rate,  
78 which, as is obvious, depends on the use of each item for more than one financial year.

79 The circumstance of having a single cost concerning a summation of differentiated assets would therefore not  
80 allow, on the one hand, the determination of the exact qualitative composition of the company's assets and, on  
81 the other hand, the identification of the loss of value of each asset due to economic obsolescence and physical  
82 wear and tear. This applies to both the seller and the buyer even though the two parties, as we shall see in the  
83 following pages, have to deal with, in part, different issues.

84 The separation of the total cost arising from the purchase/sale on a lump-sum basis of several real estate assets  
85 is, therefore, a necessary step for financial reporting to be clear and correct and, consequently, to be legitimate  
86 and regular in civil law.

87 The doctrine agrees that the "allocation" of the overall cost to the various assets acquired en bloc must be  
88 accomplished by dividing the total cost of acquisition of the whole of the assets implemented based on the  
89 allocation parameter constituted by the market value of the individual assets purchased by the company in a  
90 single solution.

91 The most frequent example of such bulk purchases concerns the acquisition of a plurality of buildings and/or  
92 assets. Consider, for example, the purchase of a building containing several fixed assets (plant, machinery,  
93 furniture, etc.) at a price determined "in lump sum".

94 Such a contract of sale and purchase imposes, on a substantive level, the use of the parameter of apportionment  
95 of the total cost on the various assets purchased based on their market value. The hypothesis of using other  
96 parameters, whether physical (e.g. volume of the goods, space occupied by the goods, number of goods, etc.)  
97 or economic, is not acceptable as it would lead to an allocation lacking the elements of economic correctness  
98 necessary for determining civil law values that are true.

99 This principle, which has always been unanimously shared by national and international doctrine, has also been  
100 adopted by the Italian national accounting standards issued by the National Council of Chartered Accountants  
101 and Accounting Experts. Principle No. 16 Tangible Fixed Assets states that:

102 "45 When a tangible fixed asset is an economic-technical unit, i.e. an assembly of assets coordinated with each  
103 other in a technical-productive logic (e.g. a production line or a factory), its purchase or production cost refers  
104 to the entire unit as a whole; in such cases, the values of the individual assets composing it must be determined  
105 to (a) distinguish assets that are subject to depreciation from those that are not and (b) identify the different  
106 lengths of their helpful lives. The value of individual assets is determined based on market prices, considering  
107 their condition. "

---

108 Principle No. 16 Property, plant and equipment, cited above, also addresses the hypothesis that the sum  
109 of the market values of the individual assets being purchased/sold does not coincide perfectly with the figure  
110 agreed for the lump-sum purchase. Where there is a divergence between the sum of the market values and the  
111 agreed lump sum value, it is suggested that this allocation method be applied: "46 Suppose the sum of the  
112 values attributed to the individual assets exceeds the cost of the entire economic-technical unit. In that case,  
113 the unique values attributed are proportionately reduced to bring the total cost of the whole unit. If, on the  
114 other hand, the sum of the values attributed to the individual assets is less than the cost of the entire unit, the  
115 difference is proportionally increased in the market values of the individual assets, provided that the resulting  
116 value is recoverable.

117 Having outlined the recommended methodologies for allocating an overall cost for a purchase/sale of a set of  
118 tangible fixed assets, one must ask oneself the fundamental importance of correctly determining these individual  
119 values.

120 The observations that can be made on this issue partly differ when considering the seller or the buyer, while  
121 they coincide perfectly.

122 Let us begin by analysing the issue that differentiates between the position of the buyer of the block of assets  
123 and the seller of such assets. One must ask oneself what the consequences might be of determining untrue and  
124 thus incorrect unit values of individual assets. The element of profound differentiation between the position of  
125 the purchaser and the position of the seller concerns the tax aspect of the transaction. For the seller, even if the  
126 values determined with reference to the individual assets were incorrect, there is no fiscal effect or problem because  
127 the sum of the capital gains and losses referred to each asset is identical whatever the value attributed to the  
128 individual assets. There are, therefore, no tax consequences for the seller in the event of incorrect determination  
129 of the values attributed to the individual assets. Profoundly different is the situation of the purchaser of the  
130 assets. For this person, the value attributed to the individual assets represents the figure indicated in financial  
131 reporting and on which it will calculate depreciation, which is tax-relevant. Should the values attributed to  
132 the individual assets be manifestly incorrect, it is evident that the determination of depreciation would also be  
133 manifestly untrue. Since, albeit with various differentiations, all the laws of the different countries generally  
134 assume that the starting value for the tax determination of income is the depreciation recognised in financial  
135 reporting (albeit with differences concerning the use of this data), it is evident that the recognition of untrue  
136 values of tangible fixed assets in the balance sheet leads to the determination of incorrect and therefore faulty  
137 depreciation, which can inevitably have severe consequences for tax purposes.

138 For the purchaser of the assets as a whole, it is therefore essential that the unit value attributed to each asset  
139 purchased en bloc is correct and accurate. In contrast, this problem, at the tax level, is less relevant for the seller.

140 At the time of the sale, this party discharges the values recorded in financial reporting. Even from the  
141 preparation of correct, valid and understandable financial reporting, determining any unit values associated with  
142 the individual assets sold in bulk has no particular impact on the seller's financial reporting. If any, an incorrectly  
143 attributed value will affect the individual capital gain or loss attributed to the various assets. Still, it will not  
144 affect the algebraic sum of the capital losses and gains connected to each asset.

145 Quite different is the situation of the purchaser. The person who acquires the assets must report the values in  
146 the financial reporting for the year as determined by the application of the allocation method used, illustrated  
147 in the preceding pages as the only method unanimously accepted by all doctrines. If the values attributed  
148 to individual assets purchased en bloc were to identify an incorrect and untrue figure, untrue and potentially  
149 misleading values would inevitably be reported in financial reporting. If such a situation were to occur, financial  
150 reporting would certainly not be able to be described as fair, true and understandable, postulates that, despite  
151 the differences found in the various national laws and accounting standards, always represent the three basic  
152 reference postulates for the preparation of financial reporting for the financial year.

153 In such a situation, the acquirer's financial reporting would therefore be invalid and subject to challenge by  
154 third parties outside the company or shareholders. The methods of challenge vary from country to country, as  
155 does the time frame within which it must bring a challenge. Despite this inevitable differentiation, it can affirm  
156 that in all the laws of any country, the presence of incorrect values in financial reporting identifies a ground for  
157 challenging financial reporting as an illegitimate and invalid document.

158 In addition, it may also recall that if the incorrect allocation of values was carried out to deceive third  
159 parties or obtain an unfair profit for the person who carried it out, most nations' legislations provide that  
160 criminal regulations apply. False financial reporting or, in the formulation adopted by the Italian legislator,  
161 fraudulent corporate communications of a criminal nature entail, among other penalties, potential imprisonment.  
162 An identification of unitary values of assets resulting from a block sale carried out within illegal boundaries brings  
163 the transaction within the criminal field, with all the consequences that such a situation entails.

164 It can understand from the previous that it is essential that, in the event of a sale en bloc of tangible assets, the  
165 unit values of the individual assets are determined correctly. As we have already pointed out, the unanimously  
166 accepted benchmark is the market value of the individual assets based on which the lumpsum transfer price is  
167 allocated. In this regard, it should note that it is difficult to identify the market value of individual assets because  
168 tangible fixed assets sold in the bloc are always second-hand assets, and, consequently, no objective price lists  
169 are available for such assets. Therefore, the sales price assessment is a subjective evaluation by the party making  
170 the determination. Because this figure is correct as it directly impacts the apportionment of the total lump sum

### 3 3) THE VALUATION OF JOINT PRODUCT COSTS AND INVENTORIES OF GOODS OUTPUT FROM JOINT PRODUCTION PROCESSES

---

171 cost determined for the sale of individual assets en bloc, it should carry out appraisals as only an estimate can  
172 validate the market value of individual assets.

173 In this regard, it must be emphasised that there are three types of appraisals: a) Simple (or Straightforward)  
174 Appraisal b) Certified Appraisal c) Sworn Expertise.

175 A straightforward appraisal is a document written by an expert in the relevant subject matter in which the  
176 person sets out their opinion on a given issue. Where the subject of the appraisal is the market values of the  
177 assets being sold for a lump sum, the appraiser indicates the values that, in his experience, reflect the reality of  
178 those assets.

179 The characteristic feature of the straightforward appraisal is that it can draw up without observing special  
180 formalities concerning the document's form and substance. An expert in the field must issue such an appraisal  
181 after he has carried out research, examinations of the property to be sold, and in-depth studies that he deems  
182 indispensable to draw up the document he is called upon to draft. The expert signs the appraisal and, in the case  
183 of a simple appraisal, this person is not responsible for the truthfulness of the content of the assessment. Due  
184 to its characteristics, the simple expert's report does not require any formalities for its use. The simple expert's  
185 report does not need the expert to make any statements before third parties marked by a specific authority.

186 The straightforward appraisal does not explicitly require a particular type of expert to whom one can turn.  
187 The hypothesis of a block sale and the need to determine the market value of individual assets to implement  
188 the apportionment of the determined lump sum price could be a surveyor, engineer or architect. But there is  
189 nothing to prevent it also being a person other than those mentioned above who can vouch for experience gained  
190 in selling long-term fixed assets already subject to partial wear and tear.

191 Like the straightforward appraisal, the sworn assessment does not require the appraiser to make any statements  
192 before third parties marked with authority. The expert must draw up a written report without any particular  
193 formalities. In fact, the appraiser himself certifies the truthfulness and correctness of what is stated in the  
194 appraisal and the methodology used to determine what is required by the assessment. In the certification, the  
195 expert also declares the existence of his professionalism under his criminal responsibility. The expert assumes all  
196 civil and criminal liability for everything stated in the expert report. This declaration generally uses declaratory  
197 formulas recommended by notaries or lawyers. Since everything declared in the sworn appraisal is written under  
198 the civil and criminal liability of the appraiser, if the document contains material or ideological forgery, the  
199 appraiser shall be held civilly and criminally liable for what is declared and found to be false.

200 A sworn expert's report is defined because the expert takes full civil and criminal responsibility for what is  
201 written in the report by swearing an oath certifying the truthfulness and formal and substantial correctness of  
202 the report's contents. It must take the oath before a public official who may be a court clerk or a notary public  
203 in Italy. The promise is characterised by a predefined formula that the expert must follow and established by law  
204 (art. 5 R. D. 1366/22 if made before a court clerk, or art. 1, R: D: 1666/37 if made before a notary). The formula  
205 to be used provides for the explicit affirmation of "having well and faithfully performed the task entrusted to  
206 him for the sole purpose of making known the truth". Since the appraiser assumes all responsibility, including  
207 criminal responsibility, for what he asserts, the law punishes the appraiser who makes a false statement with the  
208 offence of ideological forgery committed by a private individual in a public act. Therefore, in addition to being  
209 liable, civilly and criminally, for the content of the sworn statement, the expert has an additional liability due to  
210 the oath taken, punishable by imprisonment.

211 The previous shows that the safest and most complete expert report is the sworn report since it must follow  
212 the formality to validate that the statement is more significant than any other report. The consequence is that  
213 the certified expert's report has more excellent legal value and is the one that, in a possible trial, is assessed  
214 as more credible by the adjudicating body. This means that, in the event of a block sale of several assets with  
215 a lump sum price, the sale price of each asset, which is the parameter based on which each asset is awarded a  
216 certain value based on the lump sum price paid by the purchaser, should be based on valuations contained in a  
217 sworn appraisal. In this case, the values recorded in financial reporting by the purchaser will have more excellent  
218 reliability and certainty.

### 219 3 3) The Valuation of Joint Product Costs and Inventories of 220 Goods Output from Joint Production Processes

221 The valuation of joint products obtained through a unitary production process presents significantly more  
222 problems than the valuation of jointly acquired goods.

223 One speaks of joint products if several goods are obtained from a single production process for the production  
224 of which costs are not objectively attributable to each product. Conjoint goods are thus goods simultaneously  
225 obtained with the exact input costs by a common process. Each has a considerably high sales value that none  
226 can be recognised as the top product. In joint products, the plurality of products obtained from a single product  
227 results from a conscious managerial decision and is not the consequence of a poorly planned process. If, on the  
228 other hand, good is also obtained from production, which is obligatorily derived from the process but is not the  
229 specific objective of production, we refer to so-called by-products, which we will discuss in the following pages  
230 and whose value is generally much smaller than that of the joint main goods.

231 The point in production at which goods are separated and identified as having their physicality different

---

232 from other products is called the point of separation. From this point onwards, the goods have a life of their  
233 own, different markets, different prices, or may undergo further processing, becoming work-in-progress of internal  
234 production to all intents and purposes. All costs incurred before the point of separation are considered as one  
235 overall cost and are generally referred to as joint costs.

236 In the oil, chemical, agricultural, and dairy industries, many examples of joint production pose the problem  
237 of valuing jointly produced goods. Since, in these sectors, the issue of determining the value of goods obtained  
238 through joint production is widespread and has considerable weight in the context of both the determination of  
239 product cost for making managerial decisions and the valuation of closing inventories, the issue in question has  
240 been and still is the subject of numerous scholars.

241 It should note that the main joint products are often the subject of different processes to improve the goods,  
242 while the sub-products are sold exactly as they come out of production. There are cases where the subproduct  
243 if further processed, can be sold at relatively high prices. When this occurs, the by-product is further processed.

244 A substantial difference between main joint products and sub-products concerns the selling price of the goods,  
245 provided, as argued above, that the subproduct does not undergo further processing. If this is not the case, the  
246 sub-product price is lower than that of the main joint products.

247 In essence, therefore, it can be said that the joint main products represent management's production targets  
248 while the so-called by-products identify a byproduct of the production process which, at times, may have a market  
249 value which, if any, is generally much lower than that of the joint main products.

250 Where there is a joint production with outputs of primary products and/or by-products, there is a need to  
251 identify the cost attributable to the individual assets obtained from the production process both to be able to  
252 make effective managerial decisions and to be able to evaluate the eventual final inventories of these assets.

253 Before analysing the methodologies for allocating costs to the output goods of joint processes and the valuation  
254 of joint goods, it should point out that costing can be carried out using the traditional method by centres and  
255 the ABC methodology.

256 In works dealing with the issue of product costing, contrast is often made between so-called "traditional"  
257 and so-called "evolved" methods. Not infrequently, the first mentioned category is illustrated in such a way  
258 as to convey the idea that, fundamentally, it is an ancient technique. Inevitably, this permeates every one of  
259 its statements with a sense of 'overcoming any problem' when illustrating so-called 'evolved' methods. In the  
260 following pages, we will show how, for accounting data to be correctly understood by those who determine them  
261 and by the users, it is necessary to overcome the labels that have always accompanied the in-depth study of this  
262 subject.

263 For the time being, we intend to limit ourselves to illustrating the various calculation techniques, deferring to  
264 the paragraph mentioned above any consideration of the "goodness" or "insufficiency" of the methods examined  
265 and of the terminology used to identify the various costing techniques.

266 Concerning the methodology implemented according to the so-called traditional methods, the product cost is  
267 the result of the allocation of the company's costs to the centres, which, in turn, can be included in companies  
268 where work is carried out by order or by the process.

269 The two types of processing present substantial differences but, albeit with some relevant distinctions, it  
270 is possible to summarise the considerations regarding determining product cost cross-sectional for the two  
271 production realities. For this reason, while being fully aware of their respective specificities, we will summarise, in  
272 a compact manner, the critical points that can be identified in the calculation of production cost in the so-called  
273 traditional methods without making further theoretical subdivisions between observations concerning job order  
274 processes and considerations inherent to process processing.

275 In synthetic terms and, consequently, somewhat simplifying concerning the complexity of the business reality,  
276 it can state that the determination of cost per process is realised when a company produces large numbers of  
277 units of a single good/service or goods/services distinguished by similar characteristics. When, on the contrary,  
278 the goods produced are many and differentiated by quality/type, it is necessary to apply a system that allows  
279 the determination of cost per order. The difference between the two types of production appears, at this point,  
280 evident: in the first case, the product cost can be standardised while, in the second case, the unit cost must, of  
281 necessity, be derived from the consideration of the individual job order being determined quantitatively.

282 In calculating the job order cost, it is necessary to identify the individual materials, specific labour, and other  
283 costs associated with a particular order/goods. It may happen that, as a result of a single production run, one or  
284 more main joint products and one or more sub-products are obtained. These goods are almost production scraps  
285 or waste products of the primary process, but they have a market value despite their smallness. The by-product  
286 is a good that results from the production of other products and is characterised by a significantly lower economic  
287 importance than the main product (s). Again, the byproduct may be sold or represent a work-in-progress of  
288 internal production.

289 /service produced. At the same time, in-process production, it makes no sense to implement such a "specific  
290 identification" operation since each good/order /service placed on the market by the company is the same as all  
291 the others.

292 The determination of the unit cost of a product is more straightforward in the context of production by the  
293 process because the calculation of the individual costs inherent in the various and multiple orders complicates the

### 3 3) THE VALUATION OF JOINT PRODUCT COSTS AND INVENTORIES OF GOODS OUTPUT FROM JOINT PRODUCTION PROCESSES

---

294 work of those charged with determining the negative components of income that can be related to the individual  
295 goods/orders/services produced by the company.

296 An element that differentiates, in reality only partially, the two calculation methods also concerns the concept  
297 of "accumulation" of costs. Whereas in-process production by order, costs must be 'stratified' on the product,  
298 in-process production, negative income components are accumulated in various departments /centres from which  
299 they are subsequently 'passed on to the different output products of the centre itself. From this assertion, it  
300 could deduce that the two methods of calculating unit product costs are characterised by such specificities that no  
301 cross-cutting consideration is possible. However, this does not correspond to reality since, despite the apparent  
302 differences, it can recognise a number of problems in the two methods, which, similarly, concern both production  
303 per order and production per process.

304 In the panorama of the many problems that an analyst/controller must solve to obtain meaningful accounting  
305 data, the issue concerning the allocation of fixed (special and/or common) costs to the individual objects of  
306 quantitative determination is of particular importance.

307 In process production, this calculation appears simplified concerning the technique of production by order in  
308 that all fixed costs are densified in a few selected centres. In reality, perhaps to overcome irresolvable problems  
309 and to facilitate the determination of the unit cost, such "agglomeration" is also often implemented in contract  
310 manufacturing. The issue, therefore, cuts across the two product types.

311 Simplifying the reality for the sake of expository clarity (and, consequently, leaving it to the analyst/contractor  
312 to transpose the following concepts into the variegated company realities), it is possible to state that, in general  
313 terms and, leaving aside the consideration of whether the individual cost is specific to job order or common to  
314 the entire process, the unit product cost derives from the summation of three essential elements variable unit  
315 cost + unit share of special fixed costs + unit share of common fixed costs = full cost.

316 Therefore, with the traditional methodology, whether production is by order or by process, costs must be  
317 localised in the various centres and then subsequently allocated to the individual products.

318 The delimitation of the centres of responsibility serves a twofold purpose: on the one hand, the precise  
319 identification of the technical, and organisational characteristics of the processes that make up the complex  
320 business combination and, on the other, the precise definition of the areas of autonomy of responsibility assigned  
321 to each organisational subject.

322 The determination of the centres is indispensable because it is based on these 'organisational' elements that  
323 can identify the specific organisational methods of deploying production resources, which in turn form the basis  
324 for the definition of standard operating conditions.

325 The determination of product costs implemented according to the traditional methodology focused mainly on  
326 centres has evolved, leading to the identification of an innovative method based not on centres but on so-called  
327 activities.

328 In the context of a flexible production system, such as the one we have today, the great difficulty in calculating  
329 product costs is allocating indirect costs, mainly due to the lack of equipment dedicated to individual products  
330 or production lines. It should also note that in advanced production realities, labour is almost always indirect,  
331 which makes it challenging to allocate it to the various products with which the worker comes into contact. Often  
332 in advanced production realities, the only cost that can be directly allocated is the cost of raw materials, which,  
333 for obvious reasons, can always be directly assigned to the product itself.

334 The costing technique called Activity Based Costing (ABC) has been proposed as a solution to the problems  
335 induced by using the traditional accounting system in the modern, highly flexible production environment.

336 ABC should therefore be one of the most critical responses to the need to renew management accounting  
337 systems.

338 Also in this case, as in the traditional methodology, the ultimate objective is to determine the cost of the  
339 product.

340 ABC represents a full cost system in that it aims to allocate all costs to the various products through an  
341 allocation mechanism which, instead of being based on centres, is based on another concept, that of activities,  
342 which we will discuss in the following pages. Since one of the most widespread criticisms of traditional accounting  
343 is that it fails to reflect the actual use of resources in the production process and to use the volume of production  
344 as the basis of attribution for the determination of product costs, the ABC, by overcoming these problems, focuses  
345 its attention, not on the centres. Still, the activities carried out by the enterprises minimised the importance of  
346 the production volume implemented, since the imputation parameters, as we shall see later, can be different from  
347 the volume produced.

348 The application of ABC, therefore, leads to the determination of a company's full cost, which is intended  
349 to direct many more cost items than in traditional systems. The full cost thus identified should, therefore, be  
350 characterised by greater objectivity in that the parameters applied, if well identified, identify the resources used  
351 to produce each good less subjectively than is the case with imputation to company centres.

352 We, therefore, speak of an innovative tool through which indirect costs are controlled, partially overcoming  
353 the product perspective to attribute a different meaning to the various activities used and developed to realise  
354 the company's production.

355 The ABC system is based on the following considerations:

356 1. All company activities are created to support the production and distribution of products and services.

---

357 Consequently, the resources used by these activities must be related to that production process, and their cost  
358 must be included in the cost of the product; 2. All costs are considered variable and not fixed. As will be seen,  
359 variability is not a function of production volume but other parameters; 3. All costs are allocated to the activities  
360 performed by the enterprise. Therefore, an attempt is made to pass on to the activities all indirect costs, be they  
361 production, sales, and administration.

362 As can be seen, this approach is based on the identification of the so-called activity, which identifies an  
363 aggregation of elementary operations in the performance of which people, materials, technologies, structures and  
364 methodologies are combined to obtain output, products or services.

365 To conclude, some considerations must be made regarding the strategic use of information deducible through  
366 the application of the ABC methodology.

367 The doctrine has always emphasised that any accounting approach is meaningful if it can use for management  
368 and decision-making purposes. For this reason, it is essential to identify the decision-making scope of ABC.

369 According to the traditional approach of this methodology, ABC is not intended to provide information for  
370 operational control but to allocate overhead costs within the value chain to calculate the profitability of individual  
371 products, product lines, distribution channels and customers.

372 The information is intended to constitute what Kaplan calls the system of product measurements, i.e. the  
373 system of information intended to support decisions such as pricing, mixer, marketing, discontinuation of  
374 unprofitable products, etc. Other authors, e.g. Cooper, extend the scope of the system to investment decisions  
375 and, in general, to all budget decisions concerning the level of operating costs in the production of different  
376 products.

377 Some authors emphasise that the ABC methodology can also be used to produce information for decision-  
378 making in developing new product designs. The costs determined according to the ABC methodology since they  
379 are also linked to the size of production batches, set-up activities and material management should induce the  
380 designer to take an interest not only in the intrinsic characteristics of the product but also in its production  
381 process, thus stimulating the integration of product and process design. In this case, the ABC system produces  
382 cost information that can also use in medium to long-term product decisions. Only in the medium to long term  
383 can the costs ABC considers variable be considered genuinely variable. That is to say, in the medium to long  
384 time, and it is possible to make decisions which modify the resources owned or acquired or which change the  
385 consumption pattern of the resources already available to the company.

386 In this context, it can say that ABC can be used as an accounting method characterised by a strategic  
387 orientation, i.e. as a methodology that can provide information that can use not only in the short term but also  
388 in the medium and long term. According to Kaplan, the strategic nature of costs within the ABC system would  
389 derive from the notion of long-term variability, which is one of the fundamental prerequisites of the methodology  
390 under investigation, and from its ability to provide helpful information for constructing the value chain within  
391 the company.

392 A strategic accounting system should, however, first and foremost support the process of strategy formulation  
393 and implementation. According to the cited author, this process can be divided into four elements: ? Strategy  
394 formulation; ? Communication of the strategy; ? Identification of the political tactics to implement the strategy;  
395 ? Monitoring the achievement of the set strategic objectives.

396 On the one hand, ABC produces useful cost information in the strategy process. But it should not forget that  
397 a strategically oriented accounting system must, of necessity, be based on calculation principles explicitly derived  
398 from a strategic decision-making perspective, a circumstance that does not seem to characterise ABC.

399 Furthermore, the suitability of the ABC in supporting certain product decisions cannot be considered a  
400 sufficient element to define the system as strategic since it must be capable of addressing all possible options and  
401 not only those of a specific

## 402 **4 Global Journal of Management and Business Research**

403 Volume XXIII Issue II Version I Year 2023 ( ) A category. In other words, a costing system from a strategic  
404 perspective should be based on the variability of costs concerning the different possible strategic options for the  
405 company. However, the cost drivers used by ABC do not relate to strategic aspects but are exclusively connected  
406 to purely short-term operational elements.

407 Other authors also point out how attributing a presumed strategic orientation to ABC can reduce the  
408 importance of the products considered strategically most important by companies, i.e. those with a high  
409 innovation content and, consequently, lead to the reconsideration of product range expansion strategies because  
410 they are too costly.

411 To have relevant costs in the decision-making processes, it is incorrect to argue that changes in the business  
412 undoubtedly impact product costs. From this typically managerial point of view, it is necessary to determine  
413 differential costs caused by the different types of decisions under consideration. In other words, the emphasis  
414 placed on the role of the activity for costing purposes must be placed in a context of reference proper to financial  
415 reporting and not management control. According to this logic, costs, therefore, reflect the nature of the decisions  
416 under consideration, not the activity. Suppose companies using traditionally determined full costs are induced  
417 to assess the incorrect profitability of products. In that case, using full costs, based on a more reasonable  
418 allocation of general production, administration and marketing costs, offers no guarantee of having the most

## 6 2) ALLOCATION OF COSTS TO THE VARIOUS JOINT PRODUCTS

---

419 helpful information. In other words, the full cost determined by ABC logic is better than the full cost determined  
420 by traditional logic when pure knowledge inspires the calculation. On the other hand, the aim is to calculate  
421 costs relevant to a given decision; it is indispensable to identify a cost figure in the dimension deemed appropriate  
422 from a differential point of view.

423 There is no doubt, however, that the ABC system is aimed at determining product costs more accurately than  
424 the traditional methodology to support medium-and long-term strategic decisions. There is also no doubt that  
425 not all product decisions can be considered strategic. Therefore, it is not always correct to consider varying fixed  
426 or general costs in the calculation. This is only the case in the medium to long term. This means that the use  
427 of traditional marginalistic analysis techniques is definitely still valid for short-term decisions.

428 The fact that the traditionally employed accounting system and the ABC produce different types of information  
429 and are therefore not alternatives finds an authoritative consensus in doctrine. The ABC is thus interpreted as  
430 a complementary system, not a substitute for the traditional costing methodology.

431 In conclusion, it must be recognised that the strategic scope of the ABC tends to be limited and, above all, that  
432 this system is not suitable for supporting the strategic process in the context of production activity. It must be  
433 recognised, however, that an accounting system can hardly have such elements of flexibility within it to permit  
434 its use in evaluating strategic alternatives, which are very diverse. In this sense, an ABC-type approach, which  
435 is based on the analysis of the management of the activity and its cost drivers, can be of help concerning an  
436 accounting system that is rigid and tied in its structure to clear strategic choices made in the past but which  
437 may no longer have any use in the company's future.

438 As already emphasised in the previous pages, it is also possible in joint production to use either the traditional  
439 cost allocation method or the ABC methodology, depending on the characteristics of the production process  
440 itself. Depending on the aspects of the production process, which are output-providing joint products, it will  
441 be necessary to use either the traditional cost allocation method or the ABC method. Adopting one process  
442 is subjective and must be taken by the company management with accounting, strategic, and cost allocation  
443 methodology skills. Each company will opt for the methodology that best suits the production characteristics of  
444 the process under analysis. Regardless of the option, at the end of the chosen accounting methodology, a joint  
445 cost associated with the production process will be obtained, which will have to be divided between the joint  
446 products obtained from production.

447 The procedures that the doctrine has identified to subdivide the production cost of the production process  
448 between the products, main or sub-products, that result from the latter can be summarised as follows

### 449 5 1) Allocation based on Revenues from the Sale of the Output 450 Goods of the Production Process

451 The allocation of the total joint cost to the various output goods of the process based on the sales value of the  
452 goods obtained from production identifies one of the main methods of allocating joint costs. This methodology  
453 attaches considerable relevance to the economic value of the goods obtained from the joint process. Based on this  
454 value, it divides the overall costs incurred to implement the entire process with a plurality of goods as output.  
455 An element that simultaneously represents both a strength and a weakness of this methodology is that the basic  
456 assumption of such an allocation is summarised in the concept that a higher cost corresponds to a higher value  
457 and that it is, therefore, correct to attribute more costs to an asset that has a higher market value. This does  
458 not always represent the reality, but, as we shall see later, the advantages obtained from this allocation method  
459 often exceed its conceptual limits and therefore, those who support this methodology, and accept allocate costs  
460 based on the market value of the joint assets, accept the possibility that there is no perfect coincidence between  
461 the value of the costs absorbed by the individual products and the market value of the latter.

### 462 6 2) Allocation of Costs to the Various Joint Products

463 Based on a Quantitative Value The allocation of costs based on a quantitative value, i.e. according to technical  
464 quantities of production, rests its logical basis in the notion that the factors fed into the joint process have  
465 contributed to the creation of all the goods in a substantially similar manner obtained. This means that all units  
466 produced are assumed to have absorbed almost equally the costs of the joint production process. Adopting a  
467 quantitative value to allocate costs to the various products appears to be a simplification that sometimes borders  
468 on accounting absurdity unless the production is characterised by production peculiarities that make this logical  
469 methodology worthwhile. There are differences in applying this methodology: sometimes, the simple allocation of  
470 the total process cost according to the number of goods produced is used. It is evident that such a methodology  
471 can only be used in the presence of goods with a similar value. This can make it acceptable to determine an  
472 average cost from the simple division of the total cost of joint production by the number of goods produced.  
473 Another variant of the methodology under analysis is the apportionment of the total cost of a joint production  
474 through a physical measurement identified as the apportionment parameter. One can think, for example, of the  
475 weight of the goods obtained, the volume of goods obtained, or other quantitative measurements. Again, the  
476 application of such a methodology can be accepted if the physical quantity used as an apportionment parameter  
477 reflects a possibility of measuring the value of the good obtained. If, on the other hand, e.g. the weight of the  
478 goods obtained has no significance concerning the issue of the value of the joint products output of the production



---

479 process, it is evident that the use of such a methodology appears to be inadvisable. If, for example, one thinks  
480 of a joint process that has as its output two products of identical weight but of completely different value, it is  
481 evident that the use of the criterion of allocating the costs of the joint process based on the weight of the goods  
482 obtained is not possible when such a production process occurs. Part of the doctrine, highlighting the limitations  
483 of the methodologies described above, has proposed calculating weighted quantities through a parameter to be  
484 determined subjectively by the management. Even in this case, the restrictions mentioned above of allocating a  
485 cost based on a quantitative value remain, and a further subjective assessment is added concerning determining  
486 the parameter with which to weigh the weights. For this reason, the latter cost allocation method does not seem  
487 advisable, just as all processes based on a quantitative value have apparent limitations that discourage their  
488 application.

### 489 **7 3) Allocation of all Costs to a Single Product if two**

490 Goods Emerge from Production: The Main Product and a Discarded Sub-Product that is Eliminated as  
491 Unsaleable

### 492 **8 4) Allocation to the Sub-Product of a Cost Equal to its** 493 **Presumed Revenue**

494 This criterion is applied when the production process produces the main product and a sub-product with a value  
495 that, however small, is identifiable. The total of the production costs of the joint process, reduced by the cost  
496 attributed to the sub-product, is either allocated to the main product or apportioned between the various main  
497 products according to the criteria of the selling price of the goods or based on quantitative values.

498 The four methods of allocating the costs of a joint process to the individual products at of production identify  
499 the main cost allocation methods. Alongside these methods, other forms of lesser significance are characterised  
500 by such a complex calculations that they are, in practice, unworkable. For this reason, we do not deem it  
501 appropriate to continue with the list of imputation methodologies which, due to their difficulty or their limited  
502 doctrinal diffusion, are irrelevant in the context of the topic analysed in this article.

503 In the preceding pages, we have highlighted the problems associated with determining the cost of the output  
504 products of a joint process and the solutions that can potentially apply for calculating the costs of joint products.

505 In addition to this issue is the valuation of the closing inventories of such goods. On this issue, there are  
506 diverse positions, not only at the doctrinal level but also within the accounting standards of the various countries  
507 and the IAS/IFRS international standards.

508 In summary, the valuation of joint assets is addressed in the following ways in Italian legislation, Italian  
509 national accounting standards and IAS/IFRS.

510 As far as Italian legislation is concerned, when reading the articles on financial reporting and year-end  
511 valuations, it can see that the legislation does not comment on the principles applicable to the valuation of  
512 The application of such a methodology is straightforward, and the logic is obvious. Out of the process comes  
513 a primary product or products is a waste by-product that has no market. In this case, the waste by-product  
514 is given zero value as it will eliminate it, and all the costs of the joint production process will be attributed to  
515 the main product (s) output from the joint process. In the presence of a single primary product, the entire cost  
516 of the production process will be attributed to the product obtained; in the presence, on the other hand, of a  
517 plurality of primary products, it must allocate the costs through one of the methods described above.

518 the closing inventories of joint products since Italian law provides that the national accounting standards issued  
519 by the Italian accounting body supplement and complete the civil law provisions, it is necessary to illustrate the  
520 content, concerning this issue, of the national accounting standards to understand what the Italian regulations  
521 provide.

522 The principle issued by the Italian accounting body No. 13 Inventories, taking up what is established by  
523 the Italian Civil Code and aligning itself with what is now unanimously accepted by all doctrine and practice  
524 worldwide, establishes that "inventories are valued in financial reporting at the lower of purchase or production  
525 cost and realisable value inferable from the market (Article 2426, No. 9, Italian Civil Code).

526 The valuation of inventories is carried out independently for each category of elements comprising the item.....  
527 (so that) 'the heterogeneous elements included in the individual items are valued separately.

528 As for all goods, including those not arising from joint production, Italian National Standard No. 13 Inventories  
529 states that "16 Assets included in inventories are initially recognised at the date on which the risks and rewards  
530 associated with the acquired asset are transferred.

531 The transfer of risks and rewards usually occurs when the title is transferred following contractually agreed  
532 terms.

533 If, under specific contractual provisions, there is no coincidence between the date on which the transfer of risks  
534 and rewards takes place and the date on which title is transferred, the date on which the transfer of risks and  
535 rewards prevails.

536 The date on which the transfer of risks and rewards took place. Inventories may include, but are not limited  
537 to: a) Inventories at the Company's factories and warehouses, excluding those received from third parties for  
538 viewing, trial, processing and/or storage, etc. b) Inventories owned by society at third parties on consignment,

## 8 4) ALLOCATION TO THE SUB-PRODUCT OF A COST EQUAL TO ITS PRESUMED REVENUE

---

539 processing, trial, etc. c) Materials, goods and products purchased that have not yet been received but are in  
540 transit when, according to the terms of purchase, the risks and rewards associated with the asset purchased have  
541 already been transferred to society (e.g. delivery of the supplier's factory or warehouse)".

542 The purchase cost also includes incidental charges (such as transport costs, customs, and other taxes directly  
543 attributable to that material).

544 Returns, discounts, rebates and premiums are deducted from costs. The discounts mentioned are commercial  
545 ones."

546 Italian National Accounting Standard No. 13 Inventories specifies, in more detail than the code does, that  
547 "production cost includes direct costs and indirect costs (so-called production overheads) incurred in the course  
548 of production and necessary to bring inventories to their present condition and location for the portion reasonably  
549 attributable to the product relative to the period of manufacture and up to the time from which the asset can  
550 use; using the same criteria, ..... charges relating to the financing of manufacture, whether inhouse or at third  
551 parties, can be added. It excludes distribution costs ..... The charges typically identifiable as components of  
552 the cost of production may be summarised, by way of example but not limited to, as follows: Direct Costs ? Cost  
553 of materials used, including transport on purchases (direct material); ? Cost of direct labour, including ancillary  
554 charges; ? Packaging; ? Costs for services directly related to the manufacturing process; ? Costs related to  
555 production licences.

556 General production costs ? Salaries, wages and related charges relating to indirect labour and costs of technical  
557 management of the plant; ? Depreciation of tangible and intangible assets that contribute to production; ?  
558 Maintenance and repairs; ? Consumables; ? Other costs incurred in the processing of products (methane gas,  
559 water external maintenance, security services, etc.).

560 Production overheads include all common production costs necessary to bring inventories to their current  
561 condition and location. Production overheads include production costs that are not directly attributable to  
562 products.

563 Without prejudice to the specific characteristics of the production process of each company, the allocation  
564 parameters that can use for the purpose of allocating common overheads are, by way of example but not limited  
565 to ? The direct labour hours; ? The direct labour cost; ? The machine hours; ? The prime cost (i.e. direct  
566 material and direct labour).

567 In some cases, it may be appropriate to use absorption percentages by department or groups of departments.  
568 Production overheads can be either fixed or variable.

569 Fixed production overheads are those indirect costs of production that remain relatively constant as the volume  
570 of production changes, such as depreciation and maintenance of plant and machinery and the costs of technical  
571 management of the plant.

572 Variable production overheads are those indirect costs that vary with production volumes, such as indirect  
573 materials and labour.

574 Fixed production overheads are allocated to each unit based on average production capacity.

575 The average production capacity represents the production that is expected to be realised on average during  
576 several financial years or seasonal periods under normal conditions, taking into account the loss of capacity  
577 resulting from planned maintenance; it is lower than the theoretical maximum capacity, as from it must  
578 be deducted the downtimes for repairs, unavailability of material or labour, other unforeseeable causes of  
579 interruption, etc. It may use the actual production level to allocate fixed overhead costs if this approximates the  
580 average production capacity.

581 The amount of fixed overhead costs allocated to each unit produced must not increase as a result of low  
582 production or idle capacity. Indeed, if, for various reasons, the average production capacity of a plant is not  
583 utilised, the allocation of fixed overhead production costs based on an actual level of the production below the  
584 normal levels for that plant would result in the allocation to inventories of higher costs due to the nonutilisation  
585 of normal production capacity. These higher costs not attributable to the products in stock are recognised as  
586 costs for the period.

587 In the case of utilising production capacity beyond the level considered normal, the allocation of fixed overhead  
588 costs to products is made based on actual production capacity to prevent inventories' value from exceeding the  
589 cost incurred.

590 Variable production overheads are allocated to each unit based on the actual production level.

591 Costs of an exceptional or abnormal nature are excluded from production costs; for example, the costs of  
592 moving a plant from one facility to another (unless they are necessary for the production process before a further  
593 production stage), repair costs of an exceptional nature due to fires, hurricanes, etc., or the costs of repairing a  
594 plant in the event of a fire or a hurricane.

595 Regarding the determination of the price of presumed realisation, with which it must compare the cost of  
596 production, Italian Accounting Standard No. 13 Inventories specifies that: "the realisable value that can infer  
597 from the market trend of raw and ancillary materials, goods, finished products, semi-finished and work-in-progress  
598 is equal to the estimated selling price of the goods and finished products in the normal course of business, having  
599 regard to information inferable from the market, net of presumed completion costs and direct selling costs (such  
600 as, for example, commissions, transport packaging). To determine the realisable value based on market trends,

---

601 the rate of obsolescence and inventory turnaround times, among other things, must be considered. In addition  
602 to general and administrative costs, distribution costs are excluded from the valuation of inventories.”

603 If there are confirmed sales orders with a fixed price, this price is used to determine the realisable value based  
604 on the market trend of the corresponding inventories in the warehouse. Thus, inventory quantities relating to  
605 confirmed sales orders with a fixed price remain valued at cost, despite declining prices inferable from market  
606 trends. This is based on the assumption that it is reasonably sure that the agreed prices will be adhered to.  
607 Otherwise, the inventories are written down to their market-denominated realisable value in the same way as  
608 other inventories of that commodity.”

609 After explaining the basic principle of the valuation of closing inventories, Principle No. 13 Inventories deals  
610 with the valuation of joint products.

611 Italian National Accounting Standard No. 13 Inventories addresses the issue of joint products by implicitly  
612 stating that such products are also subject to the general rule applicable to the valuation of all closing inventories.  
613 However, concerning allocating costs common to all joint goods, the accounting standard establishes a simplified  
614 principle concerning what is indicated for all other types of goods in inventories. Indeed, Standard No. 13 states  
615 that: ”concerning products with non-divisible common costs, in cases where it is not technically possible to  
616 reasonably determine the share of the cost to be allocated to each product, it may be determined in proportion  
617 to the realisable value inferable from the market trend of the various products.”

618 The cited principle also addresses the issue of the valuation of by-products and rejects a joint process.  
619 Concerning this issue, even if there is no unanimous consensus on the definition, it can state that almost all  
620 authors agree on the circumstance that while offcuts are, in general, materials used in processing that, precisely  
621 because of the characteristics of the finished product, represent elements that are not included in the final product,  
622 offcuts identify products or sub-products that, due to quality, processing inaccuracies, or production errors, are  
623 not saleable assets on a par with the company’s primary product. Both offcuts and scraps can have various uses.

624 According to doctrine, each of these uses corresponds to a detailed assessment: ? Offcuts may be without  
625 recovery (e.g. small pieces of cloth from textile processing that have to be disposed of in landfills) ? Offcuts may  
626 have an internal recovery in production (e.g. sawdust used in the woodworking process to

627 The Italian accounting principle no. 13 Inventories has addressed the issue of the valuation of prejudice to  
628 the provisions of paragraph 37, by-products or offcuts of insignificant amount may be valued directly at their  
629 realisable value inferable from the market trend, provided that this value is deducted from the cost of the main  
630 product”.

631 IAS 2 Inventories, first of all, emphasises that a) [Deleted] b) ??.. c) Biological assets related to agricultural  
632 activity and agricultural produce at the point of harvest (see IAS 41 Agriculture).

633 This Standard does not apply to the measurement of inventories held by: a) Producers of agricultural and  
634 forest products, agricultural produce after harvest, and minerals and mineral products, to the extent that they  
635 are measured at net realisable value in accordance with well-established practices in those industries???

636 Subsequently, it addresses the issue of the valuation of joint products. Even IAS 2, while noting the difficulties  
637 of allocating costs to the individual product outputs of joint production, does not consider it necessary to abandon  
638 the basic valuation principle that can use for all inventories.

639 IAS 2 emphasises that when the transformation costs of each product are not separately identifiable, they  
640 are allocated between the products according to a rational and uniform criterion. The allocation may be based,  
641 for example, on the relative sales values of each product, considered at the stage of the production process at  
642 which the products are separately identifiable or at the end of production. The International Standard, therefore,  
643 suggests that an attempt should be made to allocate common costs using the parameter that, in the context,  
644 may be recommended as ”the most consistent and objective”. As an example, it cites market value.

645 International Accounting Standard IAS two does not give any examples or further comments on this form of  
646 cost allocation. The doctrine unanimously holds that the application of the method of allocating costs based  
647 on the sales values of the products presupposes the definition of the total sales revenues of the individual joint  
648 products, the identification of the weighted weight of the revenues of each product obtained from the joint process  
649 concerning the total revenues of the output goods of that production, and the allocation of the common costs of  
650 the production process to the individual products based on the weight of the revenues of the products themselves  
651 measured on the total revenues.

652 It should be noted that scholars always point out that this method of allocating the common costs of the joint  
653 process results in the correct determination and allocation of common costs, especially if a similar profit margin  
654 characterises the joint products.

655 The allocation principle based on the product sales value method is only one example that IAS 2 performs.  
656 This standard does not define the required methods of allocating joint costs and, consequently, leaves the preparer  
657 of financial reports complete freedom to use other parameters should they be considered more valid than the one  
658 indicated by the international standard merely as an example.

659 Assuming that the criterion suggested by IAS 2 is used, the valuation of inventories of joint products would  
660 follow the general principles that can use for the valuation of inventories: obligation to choose the lower cost and  
661 market value.

662 The international accounting standard also addresses the issue of the presence of by-products or scrap in the  
663 joint process and states that ”most byproducts, by their nature, are immaterial. When this is the case, they are

664 often measured at net realisable value and this value is deducted from the cost of the main product. As a result, the  
665 carrying amount of the main product is not materially different from its cost.” Therefore, the above international  
666 accounting standard points out that if by-products of processing and offcuts do not have a relevant value, the  
667 net realisable value method may be applied. This method assumes that the offcuts or derivatives of a primary  
668 product are assigned a cost equal to the value of the assumed selling price with fewer distribution costs. The  
669 deemed finished value identifies the total cost allocated to the joint process’s main product output. Applying this  
670 methodology, a common cost share is attributed to the main product, which identifies the accounting difference  
671 between the total cost of the joint process and the market value attributed to the by-products and waste.

## 672 9 Global Journal of Management and Business Research

673 Volume XXIII Issue II Version I Year 2023 ( ) A © 2023 Global Journals ? Offcuts may be sold at low prices (e.g.  
674 sawdust sold to third parties at low prices): They are valued at a lower cost, and market value ? Offcuts may be  
675 unrecoverable (e.g. spoiled wood panels that have to be taken to landfill): The cost for disposal has to be added  
676 to the cost of producing the goods output of the production process ? Scrap may be resalable (low-quality wood  
677 panels that can resell at reduced prices): They are valued at a lower cost and market value ? Scrap can have an  
678 internal recovery in production (damaged wood panels that can be used in the production process in the boiler  
679 department): They are valued at the cost of the raw material they derive.

680 by-products and offcuts by stating that ”Without ”This Standard applies to all inventories, except:

681 As can be seen, the Italian national accounting standard 13 inventories transpose, concerning by-products and  
682 waste, as stated in IAS 2.

683 As pointed out in the preceding pages, IAS 2 does not address the issue of the valuation of agricultural  
684 products. Concerning these goods, IAS 2 states: ”in accordance with IAS 41 Agriculture inventories comprising  
685 agricultural produce that an entity has harvested from its biological assets are measured on initial recognition  
686 at their fair value less costs to sell at the point of harvest. This is the cost of the inventories at that date for  
687 application of this Standard”.

688 As noted above, while OIC No. 13 makes no specific reference to joint products of an agricultural nature, IAS  
689 No. 41 highlights a particular valuation criterion that applies only to farm products. It should note that in IAS  
690 2 Inventories and IAS 41 Agriculture. There is no specific reference to the fact that agricultural products can  
691 be considered joint products. The doctrine, however, agrees that agricultural production is often a ’textbook’  
692 example of joint production.

693 IAS No. 41 emphasises that the principle applies to agricultural products, i.e. products that represent the  
694 harvest of the enterprise’s biological assets up to the harvest time. From that point onwards, IAS 2, Inventories,  
695 or any other International Accounting Standard as may be appropriate is applied. Therefore, IAS No. 41  
696 Agriculture and the valuation criteria outlined therein never apply to the post-harvest agricultural production  
697 process. For example, IAS No. 41 emphasises that the process that transforms grapes into wine by the winegrower  
698 who has grown the grapes does not fall within the specifics regulated by IAS No. 41 but must be considered an  
699 example regulated by IAS No. 2. The International Standard emphasises that although such a process may be  
700 a logical and natural extension of agricultural activity and the events that occur may bear certain similarities to  
701 biological processing, it is not included in the definition of agricultural activity considered in IAS 41’. applied.  
702 Accordingly, this Standard does not deal with the processing of agricultural produce after harvest; for example,  
703 the processing of grapes into wine by a vintner who has grown the grapes. While such processing may be a logical  
704 and natural extension of agricultural activity, and the events taking place may bear some similarity to biological  
705 transformation, such processing is not included within the definition of agricultural activity in this Standard.”

## 706 10 Table No

707 The table below provides examples of biological assets, agricultural produce, and products that are the result of  
708 processing after harvest:

709 to the goods and by-products that emerge from joint production. With regard, exclusively, to agricultural  
710 products as identified above, IAS No 41 points out that the general valuation principle of comparing cost and  
711 market value and then choosing the lower can be replaced by the following code: it shall measure agricultural  
712 produce harvested from the enterprise’s biological assets at its fair value less estimated costs to sell at the time  
713 of harvest. This measurement is the cost at the date that IAS 2, Inventories or another applicable International  
714 Accounting Standard is applied.

## 715 11 Global Journal of Management and Business Research

716 Selling costs include commissions to brokers and agents, contributions from supervisory authorities and  
717 commodity exchanges, taxes and transfer charges. Selling costs exclude transport and other expenses necessary  
718 to physically bring the assets to the location where the sale occurs.

719 Calculating the fair value of a biological asset or agricultural product may be facilitated by grouping biological  
720 or agricultural products about specific significant characteristics, for example, age or quality. The company  
721 chooses these characteristics about those used in the market as a basis for price calculation.

722 Companies often enter into contracts to sell their organic assets or agricultural products at a future date.  
 723 Contract prices are not necessarily relevant in assessing fair value, as fair value reflects the current market  
 724 situation in which a willing buyer and a willing seller enter a transaction. As a result, the fair value of a  
 725 biological asset or agricultural product is not changed due to the existence of a contract.

726 In conclusion, it should note that International Accounting Standard 42 emphasises that if the fair value of a  
 727 biological asset and market values are not available and alternative estimates cannot be identified, the fair value  
 728 should not be applied. When such a situation occurs, the biological asset, even the output of a joint process, can  
 729 only be valued at cost less any depreciation and impairment losses created during production. It should recall  
 730 that regardless of the reference value, selling costs must always be subtracted from the value that identifies the  
 731 valuation of the final inventories of agricultural products, whether or not they are outputs of joint production.

## 732 12 Conclusions

733 After this summary concerning joint products, it can see that the various international and national accounting  
 734 standards tend to converge on the basic principle of closing inventories, whereby goods must be valued at a  
 735 lower cost and net market value. However, as we have seen in the preceding pages, this principle is subject to  
 736 simplification or modification in the case of joint products, precisely because of the characteristics of the multiple  
 737 goods that are the output of a joint process that cannot be objectively attributed Ankarath N., KJ Mehta K.  
 738 J., Ghosh T. P., Alkafaji Y. A., ( 2010), Understanding IFRS fundamentals: international financial reporting  
 standards, John Wiley and Son. <sup>1</sup>

<b>Biological assets</b>	<b>Agricultural produce</b>	<b>Products that are the result of processing after harvest</b>
Sheep	Wool	Yarn, carpet
Trees in a timber plantation	Felled trees	Logs, lumber
Dairy cattle	Milk	Cheese
Pigs	Carcass	Sausages, cured hams
Cotton plants	Harvested cotton	Thread, clothing
Sugarcane	Harvested cane	Sugar
Tobacco plants	Picked leaves	Cured tobacco
Tea bushes	Picked leaves	Tea
Grape vines	Picked grapes	Wine
Fruit trees	Picked fruit	Processed fruit
Oil palms	Picked fruit	Palm oil
Rubber trees	Harvested latex	Rubber products
Some plants, for example, tea bushes, grape vines, oil palms and rubber trees, usually meet the definition of a bearer plant and are within the scope of IAS 16. However, the produce growing on bearer plants, for example, tea leaves, grapes, oil palm fruit and latex, is within the scope of IAS 41.		

Figure 1: Global

739

<sup>1</sup>© 2023 Global Journals



- 740 [Accounting Research] , *Accounting Research* 21 (1) p. .
- 741 [Hopwood and Miller ()] , A G Hopwood , Peter Miller . 1994.
- 742 [Yuthas et al. ()] , K Yuthas , R Rogers , J F Dillard . 2002.
- 743 [Hopper et al. ()] , A Hopper , J Burns , M Yazdifar . 2004.
- 744 [Webster and Yee ()] , T Webster , G Yee . *Web based energy information and control systems* 2021. River  
745 Publisher.
- 746 [Miller and Hildreth] ‘2019) Performance-Based Budgeting’. G J Miller , W B Hildreth . *Rabin J*
- 747 [Kuhnle et al.] ‘2021) Designing and adaptive production control system using reinforcement learning’. A Kuhnle  
748 , J P Kaiser , F Theiss , N N Stricker , G Lanza . *Journal of Intelligent Manufacturing* 32 (3) p. .
- 749 [AlexanderD ()] ‘A European true and fair view’. AlexanderD . *European accounting review*, 1993. 2.
- 750 [Adelberg ()] ‘A Methodology for Measuring the Understandability of Financial Report Messages’. A H Adelberg  
751 . *Journal of Accounting Research* 1979. 17 (2) p. .
- 752 [Alexander and Jermakowicz ()] *A true and fair view of the principles/rules debate*, Abacus, D Alexander , E  
753 Jermakowicz . 2006. 42.
- 754 [Moisello ()] ‘ABC: evolution, problems of implementation and organizational variable’. A M Moisello . *American*  
755 *Journal of industrial and business Management* 2021. 2 (2) p. .
- 756 [Hopwood ()] *Accounting and human behavior*, A G Hopwood . 1976. Prentice Hall.
- 757 [Hopwood ()] ‘Accounting and the environment’. A G Hopwood . *Accounting, Organizations and Society* 2009.  
758 34 p. .
- 759 [Hopwood ()] ‘Accounting and the pursuit of efficiency’. A G Hopwood . *Accounting, Auditing & Accountability*  
760 *Journal* 1990. I p. .
- 761 [Accounting as social and institutional practice] *Accounting as social and institutional practice*, Cambridge  
762 University Press. 24.
- 763 [Alexander and Schwencke ()] ‘Accounting change in Norway’. D Alexander , H R Schwencke . *European*  
764 *Accounting Review* 2003. 12 p. .
- 765 [Alexander and Schwencke ()] *Accounting changes in Norway: a description and analysis of the transition from*  
766 *a continental towards an anglo-saxon perspective on accounting*, D Alexander , H R Schwencke . 1997. p. 20.
- 767 [Albrecht and Sack ()] ‘Accounting Education: Charting the Course Through a Perilous Future’. W S Albrecht  
768 , R J Sack . *Accounting Education Series* 2001. American Accounting Association. 16.
- 769 [Chenhall ()] *Accounting for the Horizontal Organization: A Review Essay*. *Accounting, Organizations and*  
770 *Society*, R H Chenhall . 2008. 33 p. .
- 771 [Burchell et al. ()] ‘Accounting in its social context: Towards a history of value added in the United Kingdom’.  
772 S Burchell , C Clubb , A G Hopwood . *Accounting, Organizations and Society* 1985. 10 p. .
- 773 [Obaidat ()] ‘Accounting Information Qualitative Characteristics Gap: Evidence from Jordan’. A N Obaidat .  
774 *International Management Review* 2007. 3 (2) p. .
- 775 [Mouritsen and Kreiner ()] ‘Accounting, decisions and promises’. J Mouritsen , K Kreiner . *Accounting, Organi-*  
776 *zations and Society* 2016. 49 p. .
- 777 [Wagenhofer ()] ‘Accrual-based compensation, depreciation and investment decisions’. A Wagenhofer . *European*  
778 *Accounting Review* 2003. 12 (2) p. .
- 779 [Bunce et al. ()] ‘Advanced budgeting: a journey to advanced management system’. P Bunce , R Fraser , L  
780 Woodcok . *Management Accounting Research* 1995. 6 p. .
- 781 [Ballwieser et al. ()] *Agency theory, information, and incentives*, W Ballwieser , G Bamberg , M J Beckmann ,  
782 H Bester , M Blickle , R Ewert , A Wagenhofer , M Gaynor . 2012. Springer Science & Business Media.
- 783 [Hopwood ()] ‘Ambiguity, Knowledge and Territorial Claims: Some Observations on the Doctrine of Substance  
784 Over Form’. A G Hopwood . *British Accounting Review* 1990. I p. .
- 785 [Hopwood ()] *An accounting system and managerial behaviour*, A G Hopwood . 1973. Lexington Books.
- 786 [Hopwood ()] ‘An Empirical Study of the Role of Accounting Data in Performance Evaluation’. A G Hopwood .  
787 *Journal of Accounting Research* 1972. 10 p. .
- 788 [Cadez and Guilding ()] ‘An Exploratory Investigation of an Integrated Contingency Model of Strategic Man-  
789 agement Accounting. Accounting’. S Cadez , C Guilding . *Organizations and Society* 2008a. 33 p. .
- 790 [Ghandour ()] ‘Analytical review of the current and future directions of management accounti and control  
791 system’. D Ghandour . *European Journal of Accounting, Auditing and Fncance Research* 2021. 9 p. .
- 792 [Annual Congress of the European Accounting Association] *Annual Congress of the European Accounting Asso-*  
793 *ciation*, Graz, Austria.

## 12 CONCLUSIONS

---

- 794 [Baines and Langfield-Smith ( )] ‘Antecedents to Management Accounting Change: a Structural Equation Ap-  
795 proach, Accounting’. A Baines , K Langfield-Smith . *Organizations and Society* 2003. 28 p. .
- 796 [Jonas and Blanchet ( )] *Assessing Quality of Financial Reporting, Accounting Horizons*, G J Jonas , J Blanchet  
797 . 2000. 14 p. .
- 798 [Barth ( )] M E Barth . *Measurement in Financial Reporting: The Need for Concepts, Accounting Horizons*, 2014.  
799 28 p. .
- 800 [Baskerville and Rhys ( )] R F Baskerville , H Rhys . *A Research Note on Understandability, Readability and*  
801 *Translatability of IFRS*, 2014. (Accademic Paper)
- 802 [Hope and Fraser ( )] ‘Beyond budgeting’. J Hope , R Fraser . *Strategic Finance* 2000. 82 p. .
- 803 [Hope and Fraser ( )] ‘Beyond budgeting? Breaking through the barrier to the third wave’. J Hope , R Fraser .  
804 *Management Accounting* 1997. 75 (11) p. .
- 805 [Chloe and Kan ( )] ‘Budget depreciation: when budgeting early increases spending’. Y Chloe , C Kan . *Journ of*  
806 *consumer research* 2021. 47 (6) p. .
- 807 [Wildavsky ( )] *Budgeting and Governing*, A Wildavsky . 2017. Routledge.
- 808 [Slighy et al. ( )] ‘Budgeting Lesson and Stories’. N Slighy , V Taffurelli , M Iber . *Growth, Creativity and*  
809 *Collaboration: Great Vision on a Great Lake*, DoyleA (ed.) 2021. (Routledge)
- 810 [Covaleski et al. ( )] ‘Budgeting research: Three theoretical perspectives and criteria for selective integration’. M A  
811 Covaleski , J H Evans , Iii , J L Luft , M D Schields . *Journal of Management Accounting Research* 2003. 15  
812 (1) p. .
- 813 [Hopwood ( )] ‘Changing Pressures on the Research Process: On Trying to Research in an Age when Curiosity  
814 is not Enough’. A G Hopwood . *European Accounting Review* 2008. 17 (1) p. .
- 815 [Communicative Action and Corporate Annual Reports Journal of Business Ethics] ‘Communicative Action  
816 and Corporate Annual Reports’. *Journal of Business Ethics* 41 (1-2) p. .
- 817 [Barret and Fraser (1977)] ‘Conflicting roles in budgeting for operations’. E Barret , L B Fraser . *Harvard*  
818 *Business Review* 1977. July August. p. .
- 819 [Rankin et al. ( )] *Contemporary Issues in Accounting*, M Rankin , P Stanton , S Mcgowan , K Ferlauto , M  
820 Tilling . 2012. Milton, Qld: Wiley & Sons.
- 821 [Johannessen ( )] *Continuous change and communication in knowledge management*, J A Johannessen . 2021.  
822 Emerald Publishing.
- 823 [Jensen ( )] ‘Corporate budgeting is broken -let’s fix it’. M C Jensen . *Harvard Business Review* 2001. 89 p. .
- 824 [Deatherage] R H Deatherage . (2021) *Security on a Budget, in Security Operations*, Taylor and Francis Group
- 825 [Samuelson ( )] ‘Discrepancies between the roles of budgeting. Accounting’. L A Samuelson . *Organizations and*  
826 *Society* 1986. 11 (1) p. .
- 827 [Doxey ( )] C H Doxey . *The controller’s Toolkit*, 2021. Wiley.
- 828 [Haller ( )] ‘Financial accounting developments in the European Union: past events and future prospects’. A  
829 Haller . *European Accounting Review* 2002. 11 (1) p. .
- 830 [Alexander and Nobes ( )] *Financial accounting: an international introduction*, D Alexander , C Nobes . 2013.  
831 Pearson.
- 832 [Barth ( )] ‘Financial Reporting Transparency’. M E Barth . *The Journal of Accounting, Auditing, and Finance*  
833 2008. 23 (2) p. .
- 834 [Frow et al. ( )] N Frow , D Margisson , S Odgen . *Continuous budgeting: Reconciling flexibility with budgetary*  
835 *control. Accounting*, 2010. 35 p. .
- 836 [Godfrey and Chalmers ( )] *Globalisation of Accounting Standards*, J M Godfrey , K Chalmers . 2007. Edgar  
837 Elgar.
- 838 [Hopwood et al. ( )] *Handbook of management accounting research*, A G Hopwood , C S Chapman , M D Shields  
839 . 2007a. Elsevier. 1.
- 840 [Hopwood et al. ( )] *Handbook of management accounting research*, A G Hopwood , C S Chapman , M D Shields  
841 . 2007b. Elsevier. 2.
- 842 [Horngren et al. ( )] C T Horngren , G L Sundem , W O Stratton . *Introduction to Management Accounting*,  
843 (Pearson) 2013.
- 844 [Morrel ( )] *How to Forecast: a Guide for Business*, J Morrel . 2018. Routledge.
- 845 [Lewandoski et al. ( )] *Ideology, trust, and spirituality: A framework for management control research in industry*  
846 *4.0 era, The futur of Management Industriy 4.0 and Digitalization*, R Lewandoski , A G Goncharuk , J J  
847 Deforowsky . 2020. p. .



- 
- 848 [Haller et al. ()] ‘International accounting’. A Haller , P Walton , B Raffournier , B . *Cengage Learning EMEA*  
849 2003.
- 850 [Schoen ()] *International accounting standards -a ‘starting point’ for a common European taxbase*, W Schoen .  
851 2004. European Taxation. 44 p. .
- 852 [Alexander et al. ()] *International financial reporting and analysis*, D Alexander , A Britton , A Jorissen . 2007.  
853 Thomson.
- 854 [Delvaile et al. ()] ‘International financial reporting convergence: evidence from three continental European  
855 countries’. P Delvaile , G Ebbers , C Saccon . *Accounting in Europe* 2005. 2 (1) p. .
- 856 [Cristea and Saccon ()] ‘Italy between applying national accounting standards and IAS/IFRS’. S M Cristea , C  
857 Saccon . *Romanian Accounting Profession’s Congress*, (Bucharest) 2008. CECCAR.
- 858 [Hopwood ()] ‘Leadership Climate and the Use of Accounting Data in Performance Evaluation’. A G Hopwood  
859 . *The Accounting Review* 1974. 49 (3) p. .
- 860 [Simons ()] *Levers of Control*, R S Simons . 1995. Harvard Business School Press.
- 861 [Libby and Lindsay ()] T Libby , M Lindsay . *Beyond budgeting or budgeting reconsidered? A survey of North-1*,  
862 2010.
- 863 [Management accounting education and training: putting management in and taking accounting out Qualitative Research in Acco  
864 ‘Management accounting education and training: putting management in and taking accounting out’.  
865 *Qualitative Research in Accounting and Management* 2004. 1 (1) p. .
- 866 [Boer ()] ‘Management Accounting Education: Yesterday, Today and Tomorrow’. G Boer . *Issues in Accounting*  
867 *Education* 2000. 15 (2) p. .
- 868 [Steven et al. ()] ‘Management accounting research in German-speaking countries’. M Steven , Floryt , J Phillips  
869 , Maurice Jr Tassin , F Wagenhofer , A . *Journal of Management Accounting Research* 2006. 18 p. .
- 870 [Gharairi ()] ‘Management control and performance’. A M Gharairi . *International Journal of Management* 2020.  
871 11 p. .
- 872 [Covaleski et al. ()] ‘Managerial Accounting Research: the Contributions of Organizational and Sociological  
873 Theories’. M Covaleski , M Dirsmith , S Samuel . *Journal of Management Accounting Research* 1996. 8  
874 (1) p. 31.
- 875 [Smith ()] ‘Measuring readability: A comparison of accounting textbooks’. M Smith . *Public History Review*,  
876 (Spring) 2021. 1992. 28 p. . (Who controls the past... controls the future)
- 877 [Nobes and Stadler ()] C W Nobes , C Stadler . *The Qualitative Characteristics of Financial Information, and*  
878 *Managers’ Accounting Decisions: Evidence from IFRS Policy Changes, Accounting and Business Research*,  
879 2015. 45 p. .
- 880 [Nobes and Parker ()] C Nobes , R Parker . *Comparative International Accounting*, (Pearson) 2016.
- 881 [Oderlheide ()] D Oderlheide . *Transnational Accounting*, (Macmillan, London) 2001.
- 882 [Mintzberg and Qatrs ()] ‘Of strategies, deliberate and emergent’. H Mintzberg , J A Qatrs . *Strategic*  
883 *Management Studies Journal* 1985. 6 (1) p. .
- 884 [Hopwood ()] ‘On trying to study accounting in the context in which operates’. A G Hopwood . *Accounting*,  
885 *Organizations and Society* 1983. 8 (213) p. .
- 886 [Onushchenko et al. ()] S V Onushchenko , A Y Berezhna , Filonych . *Budget Mechanism: Methodological*  
887 *Approach to and the Practice of Budget Decentralization*, 2021. 47 p. .
- 888 [Wagenhoferb and Göxa ()] ‘Optimal impairment rules’. A Wagenhoferb , R F Göxa . *Journal of Accounting and*  
889 *Economics* 2009. 48 (1) p. .
- 890 [Epstein et al. ()] ‘Performance Measurement and Management Control: Innovative Concepts and Practices’. M  
891 J Epstein , J-F Manzoni , A Dávila . *The CPA Journal* 2005. 2007. 20 (2) p. . (Sid R.)
- 892 [Epstein and Manzoni ()] ‘Performance Measurement and Management Control: Superior Organizational Per-  
893 formance’. M J Epstein , J F Manzoni . *Studies in Managerial and Financial Accounting*, 2010. Emerald  
894 Books. 14.
- 895 [Morton ()] ‘Qualitative Objectives of Financial Accounting: A Comment on Relevance and Understandability’.  
896 J R Morton . *Journal of Accounting Research* 1974. 12 (2) p. .
- 897 [Smith and Taffler ()] ‘Readability and Understandability: Different Measures of the Textual Complexity of  
898 Accounting Narrative’. M Smith , R Taffler . *Accounting, Auditing & Accountability Journal* 1992. 5.
- 899 [Pietra et al. ()] ‘Regulating Accounting Within the Political and Legal System’. Di Pietra , S Mcleay , A  
900 Riccaboni . 10.1007/978-1-4615-4589-7\_3. *Contemporary Issues in Accounting Regulation* 2001. Springer.  
901 p. .

## 12 CONCLUSIONS

---

- 902 [Schwaiger ()] W S A Schwaiger . *The REA Accounting Model: Enhancing Understandability and Applicability,*  
903 *International Conference on Conceptual Modeling, Conceptual Modeling*, 2015. 9381 p. . (Part of the Lecture  
904 Notes in Computer Science book series)
- 905 [Hopwood ()] ‘Situating the practice of management accounting in its cultural context: an introduction’. A G  
906 Hopwood . *Accounting Organizations and Society* 1999. 24 p. .
- 907 [Adelberg ()] *The accounting syntactic complexity formula: a new instrument for predicting the readability of*  
908 *selected accounting communications*, A H Adelberg . 1983. 1983. Summer: Accounting and Business Research.  
909 p. .
- 910 [Katz ()] *The Acquisition Budget*, B Katz . 2019. (Routledge)
- 911 [Haller and Eierle ()] ‘The adaptation of German accounting rules to IFRS: a legislative balancing act’. A Haller  
912 , B Eierle . *Accounting in Europe* 2004. 1 (1) p. .
- 913 [Hopwood ()] ‘The archeology of accounting systems’. A Hopwood . *Accounting, organizations and society*, 1987.  
914 12 p. .
- 915 [De Franco et al. ()] ‘The Benefits of Financial Statement Comparability’. G De Franco , S P Kothari , R S Verdi  
916 . *Journal of Accounting Research* 2011. 49 p. .
- 917 [Adelberg and Razek ()] ‘The Cloze Procedure: A Methodology for Determining the Understandability of  
918 Accounting Textbooks’. A H Adelberg , J R Razek . *The accounting Review* 1984. 59 (1) p. .
- 919 [Nobes ()] ‘The continued survival of international differences under IFRS’. C W Nobes . *Accounting and Business*  
920 *Research*, 2013. 43 p. .
- 921 [Hopwood ()] ‘The economic crisis and accounting: Implications for the research community’. A G Hopwood .  
922 *Accounting, Organizations and Society* 2009. 34 p. .
- 923 [Schorck and Lefebvre ()] *The good and the bad news about quality*, E M Schorck , H L Lefebvre . 2021. CRC Press.
- 924 [Ekholm and Wallin ()] ‘The Impact of Uncertainty and Strategy on the Perceived Usefulness of Fixed and  
925 Flexible Budgets’. B Ekholm , J Wallin . *Journal of Business Finance and Accounting* 2011. 38 (1) p. .
- 926 [Patel and Day ()] ‘The influence of cognitive style on the undersandability of a professional accounting  
927 pronouncement of by accounting students’. C Patel , R Day . *The British Accounting Review* 1996. 28 (2) p. .
- 928 [Nobes et al. ()] ‘The Influence of Tax on IFRS Consolidated Statements’. C W Nobes , M Gee , A Haller .  
929 10.2190/F7FC-HJA6-W2P5-U2J3. *Australian Accounting Review* 2010. 7 (1) p. .
- 930 [Zeff ()] ‘The objectives of financial reporting: a historical survey and analysis’. S A Zeff . *Journal of Accounting*  
931 *and Business Research* 2013. 43 (4) p. .
- 932 [Van Der Stede ()] ‘The relationship between two consequences of budgetary controls, budgetary slack creation  
933 and managerial short term orientation. Accounting’. W A Van Der Stede . 10.1007/978-3-319-25264-3.  
934 *Organizations and Society* 2000. 25 p. .
- 935 [Burchell et al. ()] ‘The roles of accounting, organizations and society, Accounting’. S Burchell , C Clubb , A  
936 Hopwood , J Hughes , J Nahapiet . *Organizations and Society* 1980. 5 (1) p. .
- 937 [Nobes and Aisbitt ()] *The True and Fair Requirement in Recent National Implementations*, C W Nobes , S  
938 Aisbitt . 10.2190/F7FC-HJA6-W2P5-U2J3. 2001. 31 p. .
- 939 [Kaplan and Anderson ()] *Time-driven activity-based costing. A simpler and more powerful path to higher profits*,  
940 R S Kaplan , S Anderson . 10.1108/AAAJ-04-2013-1314. 2007. Harvard business school press.
- 941 [Nobes ()] *Towards an Assessment of Country Effects on IFRS Recognition Decisions and Measurement*  
942 *Estimations*, C Nobes . 2016. Paper, Venezia.
- 943 [Jones and Smith ()] ‘Traditional and alternative methods of measuring the understandability of accounting  
944 narratives’. M Jones , M Smith . 10.1108/AAAJ-04-2013-1314. *Accounting, Auditing & Accountability Journal*  
945 2014. (1) p. .
- 946 [Nillson ()] ‘Understandability of Narratives in Annual Reports’. S Nillson . *Journal of Technical Writing and*  
947 *Communication* 1997. 27 p. .
- 948 [Hopwood ()] ‘Understanding financial accounting practice’. A G Hopwood . *Accounting, Organizations and*  
949 *Society* 2000. 25 (8) p. .
- 950 [Wagner et al. (2021)] ‘Usefulness of the budget: the, mediating effect of participative budgeting and budget-  
951 based evaluation and rewarding’. J Wagner , P Petera , B Popesko , P Novák , K ?afr . *Baltic Journal of*  
952 *Management* 2021. June 2021.
- 953 [Hopwood ()] ‘Whither accounting research?’. A G Hopwood . *The Accounting Review* 2007. 82 (5) p. .
- 954 [Hope and Fraser ()] ‘Who needs budgets?’. J Hope , R Fraser . *Harvard Business Review* 2003. 81 (2) p. .
- 955 [Beest et al. ()] *Worldwide financial reporting: The development and future of accounting standards*, F Beest , G  
956 Braam , S Boelens , G J Benston , M Bromwich , R E Litan , A Wagenhofer . 2009. April 21. 2006. Oxford  
957 University Press. (NiCE Working Paper 09-108) (Quality of Financial Reporting: measuring qualitative  
958 characteristics)