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The Study of Inventory Valuation in Manufacturing Companies from the Perspective of Tax Procedure Law and Accounting Standards[1]

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Abstract

The accounting practices are accomplished based on Tax Procedure Law in Turkey so that this gives rise to some deviations from International Accounting Standards. The primary aim of this study is to compare the two different approaches of inventory valuation which are TPL and AS-2 in accounting process. There are no so much differences in costing valuation but some differences come out when inventory declines in values. Different methods and approaches arise in such instances. Particularly, `fair Value` is a striking term in standards. This kind of differences may become problems for both of practitioners and researchers as well as for students in the adaptation of standards.

Keywords: Inventories in Manufacturing Companies, Inventory Valuation Process, Tax Procedure Law, International Accounting Standards

Introduction

One of the factors that accounting practices in any country are rested on is the law structure thereof. Accounting practices and financial reporting are mostly based on tax legislations in the Continental European Countries like Turkey, France, Germany, and Italy (Ergin, 2016, p.61).

In contrary, in the Anglo-Saxon Countries like England, United States of America, Canada, and Australia financial accounting and tax laws are separated and distinct so that the accounting practices are formed on transparency and full disclosure (Ergin, 2016, p.61). As a result of that, the accounting standards are built in such a framework in England and the United States of America.

In Turkey, the financial accounting practices are depended on tax laws as well as being compatible with the International Accounting standards. But there are some still different aspects in the accounting implementations due to this separate and distinct structure.
In this study, the inventory valuation process will be examined under three topics: taking physical count, costing and decrease in values of inventories. Particularly, we emphasize on

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distinguishing between tax laws and accounting standards in relation to costing and decline in the values of inventory. The distinct aspect of this study is to take into consideration of the two fields of accounting as a continuous process, which we believe that that is to be examined closely.

1. Inventory Valuation Process in Manufacturing Companies

As known, the inventory plays very important and crucial role in manufacturing companies. The importance of inventory stems from being involved in both income statement (the determinant of profit) and balance sheet (the determinant of asset value). As a matter of fact, the movement of items of inventory and costing must be tracked precisely by using of certain rules and standards which are rational and solid.

In the first place, a business takes a physical count of inventories (by counting, weighing, or measuring etc.). This stage is commonly named as 'inventory taking' that is merely ended with a consisting list of items on hand. As known, the time of taking physical count of inventory differs to according of recording methods used in bookkeeping: At any time under perpetual inventory method, or at the end of the fiscal year under periodic inventory method.

Secondly, the amount of items are multiplied by the unit value of item so that the total absolute amount of inventory can be calculated and determined as the inventory on hand at the statement time. One of the unique values of any economic resource is the cost value. Cost value of any item of inventory is fundamental.

Under perpetual inventory method, the cost of goods on hand can be calculated in every movement of item so that the year-end inventory is determined by those predetermined costs. The determination of cost of goods on hand contributes to stock control at the end of the year. On the other hand, periodic inventory method requires the calculation and determination of inventory on hand and cost of goods sold (or sent to production) at the end of the year since this procedure cannot be fulfilled at the time of selling. Therefore, total of purchases in the year are added to the beginning inventory thus reaching to items available to sale and subtracting the inventory on hand at the end of the year so that the cost of goods sold (or sent to production) can be calculated. As can be seen, the difference between two methods appears in terms of timing of calculation of items on hand and cost of goods sold (or sent to production).

Under perpetual inventory method; a decrease in the historical value of item on hand can be emerged at the end of the year because of damage, deterioration, and obsolescence.

In periodic inventory method, the actual value will be calculated at the end of year so that those types of impairment costs will be included into inventory on hand and cost of goods sold (or sent to production) simultaneously. There is no doubt that the market value might be lower than the cost of item that is calculated at the end of the year.

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Under periodic inventory method, the historical cost will be calculated at the end of the year. Here again, the market value of item might appear to be lower than the historical cost. In such an instance, the values of assets will be shown higher than their actual value since the expected benefit from inventory would be lower than the historical cost. And this way of reporting would be misleading. The value of inventory ought to be calculated again by considering the provision for these impairments in order to report the financial position and results of activities of a business correctly and accurately.

Valuation process consists of a three step approach and it is illustrated in Exhibit 1.

Exhibit 1: The Valuation Process of Inventory under Perpetual and Periodic Inventory Systems

A-Perpetual Inventory Method:
Stage 1: Calculation of Inventory Costs During The Year Raw materials costs are calculated and recorded when they are sent to production. Cost of goods sold are determined and recorded when the inventory items are sold. **Stage 2:** Taking Physical Count at the End of the Year A physical count is taken at the end of the year just because of taking a control of inventories whether there is any loss due to damage, theft, or etc. The adjustment entries are made if necessary. **Stage 3:** Evaluate the decreases in values of inventories If the market value is below under historical costs, then an adjusting entry must be made.
B-Periodic Method
Stage-1: Undetermined Costs During The Year Raw materials costs are not calculated and not recorded when they are sent to production. Cost of goods sold are determined and recorded at the end of the year. **Stage 2:** Taking Physical Count at the End of the Year A physical count is taken at the end of the year and they are valued by using valuation methods so that the ending inventory is determined. Then the purchases during the year and beginning inventory are added to reach the inventory that is available to sale. Finally, the ending inventory is subtracted from this amount to find the cost of goods sold (or sent to production). **Stage 3:** Evaluate the decreases in values of inventories If the market value differs from historical costs, then an adjusting entry must be made.

The amount of units of inventory owned by the company and cost of goods sold that has been incurred during the period are determined by using some valuation methods. Inventory valuation methods are called 'Inventory Valuation Methods' that are as follows (Akgüç, 2013, p.94):

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- **Costing Methods** (Specific Identification, First-In, First Out (FIFO), Last-In, First-Out (LIFO), Weighted Average Cost, Standard Cost Method, Next-In, First-Out (NIFO), Highest - In, First Out (HIFO))

-Market Value
-Lower of Market or Cost
-Gross Profit Margin
-Retail Method
-Reserved Inventory Method

The methods mentioned above can easily be used in determining the value of inventory in financial statements at the statement date particularly when the decrease in inventory occurs.

2. Cost Valuation Methods in Tax Procedural Law

As mentioned earlier, the accounting basic consists of different approaches in valuation methods in terms of the reporting objectives considering perpetual and periodic inventory recording systems.

Tax laws seek the benefits of government not the benefits of investors or creditors. As a matter of fact, tax laws have defined the minimum measures. There is no doubt that lawmakers were very sensitive in making the legislation about fairness and common principle instincts (Küçük, 2015).

Valuation in tax law means to value the assets in order to determine taxable income. In tax procedural law, the term of 'cost' is defined along with the requirement of valuation of inventories in costing the items purchased or sent to production but which methods would be used is not defined clearly.

The article numbered 262 in the Tax Procedural Law, the term of cost is defined as follows: ' the cost includes those expenditures such as expenses for acquisition of any economic resource and other expenditures as such'.

Although it is not described clearly which method could be employed in costing in legislation context, the notification numbered 176 implies the actual cost to be used. Therefore, the actual cost must be applied to inventory on hand. But when a company has a large number of inventory items that are interchangeable and not easily identified individually, then the company ought to follow moving weighted average or weighted average method. This view is dominant in practice (Özsoy, 2015, p.150). For example the businesses that sell goods such as refrigerator, automobile, and machine should use the specific method. On the other hand, average method can be selected by a business that deals with inventory items such as cotton, fuel oil, flour (Meriç, 1982, p. 2).

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TPL has been replaced by two amendments with legislation number of 4008 and 5024. In fact, those amendments were dealt with including or excluding the LIFO method in valuation methods (Akyol, 2008a, p.2).

The tax law numbered with 4008 which enabled the companies to use of LIFO was replaced with the amendment numbered with 5024 and was put in effective January 1, 2004 that postponed the use of LIFO. Therefore, the situation turned back the previous circumstances in the law (Akyol, 2008a, p.2).

As known, the necessity of objectivity in taxation requires being consistent and constant for every citizen in determination the taxable income. As a result of that, measures of valuation of assets in TPL are determined for every taxpayer to benefit equally. In order to avoid the unfairness, it is not imposed on taxpayers to use any method that are not valid in tax law (Akyol, 2008b, p.2).

Finally, it can be clearly stated that the use of LIFO is impossible while the use of specific or weighted average method is possible (Akyol, 2008b, p.2).

3. Costing in Inventory Valuation under TAS-2

In paragraph 23 of TAS-2, the specific cost method (actual cost) is used in the valuation of no interchangeable inventory items or special projects' goods and services.

Actual cost is defined as the cost which is directly charged to the inventory item. This method is adequate for those inventories that are either purchased or produced but it is not suitable in the valuation of large interchangeable items. In these circumstances, the balance of inventories is selected to determine the profit or loss.

The LIFO or Weighted Average Method should be used in the inventories other than included in paragraph 23.whic is stated in paragraph 25. In this case, we must keep in mind that business must use the same costing method for the same inventory items and it must use the different cost method for the different items.

On the other hand, TAS-2 does not allow using the LIFO. This gives rise to a conflict between the two different approaches and the companies come across with a problem how to handle the situation to reconcile with the law (Akgün, 2012, p.232).

On the other hand, TAS-2 allows using either the standard costing or retail costing only when they result in very close amount. As known; the normal levels are taken into consideration in raw materials, labor, and production capacity. In this procedure, standard cost are recalculated constantly and adjustments are made if necessary (TAS 2, p.21).

In paragraph 22, retail method can be used in retailer companies by the reason of difficulties of use of other methods. There is no doubt that this situation is subject to the benefit of being

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practical in finding out the best method. Under this method, the cost of inventory items can be calculated by subtracting a decent rate of gross margin from net sales.

4. Allowance for Valuation Loss on Inventories under TPL

Inventories need to be revalued at the end of accounting period because of decrease in their values due to obsolete or damage (Kayar, 2014, p.56). The TPL and TAS-2 have different approaches in allowances for valuation loss on inventories.

Under TPL, decrease in value of inventories can be recognized in two ways: 1) Decline in sale price that stems from economic conditions, or 2) Decline in value because of physical damage. the equal value is to be employed in both situations.

In the law article 267, 'The value of equal' is defined as the price at which any item cannot be valued clearly and it most probably would be sold at the statement date in relation to its equal one in the market. The following steps are the basics in valuation:

- **First step (average price basics):** An average price is calculated by including the sales of the current month or prior month respectively. The focus is to be on considering the same type of goods. Another precondition is that the items to be valued must be up to at least 25% of the monthly sales.

-**Second step (cost basics):** If the cost of inventory is known then the taxpayer can add 5% or 10% gross margin to that cost depending on whole sales or retail sales respectively (amendment: 23/6/1982 - 2686/35 article.).

-**Third step (estimation basics):** If an uncertainty arises in the case of above instances the valuation commission performs the task. Commission has to search market and also consider the worn out items.Of course the tax payers retain the right to sue the tax court when they are not alleviated with the value. This right does not stop tax accrual and collection.

Under TPL, in the case of determining the provision for inventories the price in agents or otherwise in the market is to be taken into consideration. as a result of this comparison, if the market price is 10 % lower than the cost, then value of equal is to be used (Koçulu, 2009, p.168).

Under the article 274, when the cost of goods purchased or produced might stay higher above the general price level in the economy then the taxpayer must be protected against the payment of tax on unreal profits. Here, it is revealed that both of market value and cost could not be sufficient for valuation of inventories. Therefore, the value of equal which can be either below or above the market value is to be employed (Koçulu, 2009, p.168).

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TPL article 278 implies the fact of decline in merchandise due to physical deterioration (because of fire, earthquake, theft, float, spoil, etc). Those merchandises are to be valued by value of equal. For this (Koçulu, 2009, p.169);

-Being the merchandise of spoil, broken, etc. is to take place in business activities or,
-The reasons for valuation loss must be natural disasters such as fire, earthquake, etc.

In the law, the highly loss is meant to get lost in value or in function by stating that highly decrease for the inventory item. In article, the reasons for loss in value have not been identified in details but they are just outlaid by examples such as natural disasters. As a result, the value of equal would be applied to similar situations (Koçulu, 2009, p.169).

Even in this condition, the second step cannot be employed. In short, general price level will be used as a basis in the inventory valuation (Koçulu, 2009, p.168). Allowance for loss on inventory will be indicated on asset side as a minus on balance sheet thus presenting the inventory with book value. It is impossible to use the value of equal in other areas except identified in article 278. In those instances valuation must be fulfilled in accordance with valuation measures of the related item (Koçulu, 2009, p.169).

The use of historical costs might mislead the users of financial statements. Because, liquidity of business will be indicated lower than the actual level so that the interested parties of business would have taken decisions based on wrong information. This is particularly a fact when the historical costs are higher than replacement costs.

5. Allowance for Valuation Loss on Inventories under TAS-2

International Financial Reporting Standards aim to help particularly creditors make decisions properly and adequately. Those standards become very effective after accounting standards. As a matter of fact, net realizable value would be most adequate valuation scale to keep the inventory items values below the historical cost so that assets would not be indicated higher than their market values.

As known, there is a close relationship between benefit and potential market value of inventory item. But in manufacturing businesses, there would be unfinished products during the production process. Therefore, assigning the cost to complete on the item will result in increasing the cost of that inventory. Likewise, the cost to complete would be detriment of the benefit.

In TAS-2, paragraph 6, ‘Net realizable value' is defined as follows (Şahin, 2012, p.27):
Estimated Sales..... xxxx
(-) Estimated Cost to Complete.....xx
Estimated Sales Allowances and Deductions.....xx (xxxx)
Net realizable value.....xxxx

In paragraph 9, it is stated that inventory items would be valued by using lower of net realizable value or cost in the case of decrease in value. As a result of that, the inventories

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would be recorded by their cost but adjustment would be made if necessary by comparing its net realizable value to its historical cost (Şahin, 2012, p.27).

In paragraph 28, it is stated that the historical cost might be lower than net realizable value and they are not returned back under following situations (Şahin, 2012, p.27);

- Damaged Inventories,
- Inventories that are not available to be used,
- Decrease in sales prices,
- Increase in estimated costs to complete
- Increase in estimated sales prices.

After having adjusted the value of inventories by calculating and recording the allowance for valuation loss on inventories, the inventories will have been shown by net realizable value. As can be seen easily, it is very significant to know how to compute the net realizable value and cost of inventory (Şahin, 2012, p.27).

TAS-2 did not identify any rate for net realizable value in the use of valuation of inventories. Decrease in value of item in comparison with historical cost will give rise to loss (Çakmakcı, 2007, p.3).

As can be seen above, it is necessary to estimate some values to reach the net realizable value. As stated in paragraph 7, net realizable value is a particular value for the certain businesses so that any discretionary attitude would be against fairness (Şahin, 2012, p.27).

A difficulty arises in determining the net realizable value and net present value of inventories. This is so because the circumstances of the applications to do with price levels are very changeable. In addition, the volatility of the goods markets from both supply and demand sides play important role in determining the values. There is no that, the aim of holding the inventories must be defined clearly (Çakmakcı, 2007, p.2).

Conclusion

There are two approaches to valuation of inventories in manufacturing businesses such as valuation in TPL and TAS-2 which have both similar and different aspects of measures. The aim of this study was reached by examining two stages in valuation process from rules to indicate mutual and different features of these two approaches.

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Exhibit 2: Valuation Process of Inventories

Valuation Process of Inventories Under Turkish Procedural Law

Attitude Toward The Process	The Use of Cost in Valuation	Allowance for Loss on Inventories
• Minimum Scales Aiming to Protect of Governmen t Interests.	• Actual Cost Method. • If impossible to identify the individual items, Average Cost Method • If the actual flow of items can be proved, FIFO . • LIFO is forbidden. • It is mandatory and constant for every taxpayer.	• Value of Equal is used in Allowance for Loss on Inventories.

Valuation Process Under TAS-2

Attitude Toward The Process	The Use of Cost in Valuation	Allowance for Loss on Inventories
• Particularly the creditors' interests are sought.	• Specific Cost Method: In the valuation of non-interchangeable inventory items or special projects' goods and services. • For the Inventories Other Than Those Mentioned Above FIFO or Weighted Average Method. • Allows to use either the standard costing or retail costing only when they result in very close amount.	• Lower of Cost or Market Value, • Fair Value is the basic scale • Cost are recalculated constantly and adjustments are made if necessary

Under TPL, the methods like LIFO, Average Cost Method and particularly specific cost method can be used but LIFO is not allowed to be used. Under TAS-2 the standard costing

and retail cost method can be used beside the methods mentioned previously. Net realizable value is a useful valuation method to reflect the actual financial position and results of activities of a business.

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At this point, like many academicians it is recommended that, different approaches of the current Tax Procedure Law and Accounting standards should be minimized. Thus the small and medium enterprises which are preparing their financial report according to the TPL can prepare these reports according to other basis of accounting. So in the way globalization they can use more "common language" and give more accurate and reliable information to the related parties. For businesses those are preparing their reports according to both standards and TPL the process will be simplified.

Different approaches can also create problems for academicians. If the lecturer gives information according to Accounting Standards students cannot use their knowledge in the practical life where the rules come from TPL. Otherwise, courses described according to law would mean moving away from the accounting principles and standards.

In fact although slowly or not at the desired level the adaptation of accounting standards is subject in our country for presenting the more global, accurate, reliable, understandable and comparable information. Therefore, in this study, approaching to both TPL and Accounting Standards in the context of inventory valuation is especially important for the harmonization process of standards.

References

Akgüç, Ö. (2013). Mali Tablolar Analizi (Genişletilmiş 15. Baskı). İstanbul: Arayış Basım ve Yayıncılık.

Akgün, A. İ. (2012). "TMS-2 Stoklar Standardı Kapsamında Tam Maliyet ve Normal Maliyete Göre Düzenlenen Gelir Tabloları Karşılaştırması". *Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 17 (2), pp.229-246.

Akyol, M. E. (2008a). "Mali Kâr Yönünden Emtia Değerlemesi". *Vergi Dünyası Dergisi,* (328).

Akyol, M. E. (2008b). "Stok Değerlemesinde Maliyet Bedeli Tespit Edilirken Yöntem Tercihi Yapılabilir mi?". *Vergi Dünyası Dergisi,* (319), pp.11-14.

Ergin, N. E. (2016). "Türkiye'de Muhasebe Hukuku ve Vergi Usul Kanunu-Türk Ticaret Kanunu'nun Kıskacında Muhasebe Kayıtları". *Vergi Dünyası Dergisi*, (417), pp.60-78.

Kayar, G. (2014). "Stokların Ölçülmesinde US GAAP ve IFRS Arasındaki Farklar". *Vergi Dünyası Dergisi,* (400), pp.54-58.

Koçulu, G. G. (2009). "Emtia Değerlemesi". *Vergi Dünyası Dergisi*, (340), pp.160-172.

Küçük, M. (2015). Yaklaşım Dergisi. http://uye.yaklasim.com/FileZone/yaklasim/Ucretsiz_Ekler/D%C3%B6nem%20Sonu/ek_200401/2004014158.htm. (Access: June 8th, 2015)

DOI: 10.19275/RSEPCONFERENCES014

ISBN: 978-605-307-447-2

Meriç, B. (1982). "Vergi Hukukunda Maliyet Bedeli Ölçüsü ve LIFO Yönteminin İşletmeleri Koruma Gücü". *Vergi Dünyası Dergisi* (5).

Özsoy, İ. (2015). "Stok Değerleme Yöntemleri ve Bu Yöntemlerin Vergi Kanunları Karşısındaki Durumu". *Vergi Dünyası Dergisi* (401), pp.143-152.

Şahin, F. S. (2012). "Türkiye Muhasebe Standartlarına Göre Stokların Değerleme Esası (TMS/2)". *Vergi Dünyası Dergisi* (368), pp.25-31.

DOI: 10.19275/RSEPCONFERENCES014