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PATENT VALUATION IN THE SCOPE OF CORPORATE TAX LAW EXCEPTION

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ABSTRACT

In recent years, research and development activities have been accelerated in many countries to achieve stable economic growth. Patent applications are also regarded as an important measure of these activities. In fact, the number of patent applications and registrations in national and international arena is becoming the most important indicator of the development in this area.

According to a report released by the World Intellectual Property Office (WIPO) in 2014, more than 60% of patent applications in the world appear to be from the US, Japan and China. In Turkey, the number of patent applications filed by domestic companies in 2014 was 4861 and the number of registered applications was 1251. In 2014, the number of applications are increased by 13% to 5512 and the number of registrations are increased by 38% to 1730. Whereas, in 2014, the number of patent applications filed by foreign companies operating in Turkey was 7514 and the number of registered applications was 7279. In 2015, patent applications increased by 12% to 8446 and registrations increased by 15% to 8370.

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Patent rights obtained through research and development activities with inherently high cost items are very compelling for small and medium-sized enterprises operating in many countries. Moreover, taken into consideration that countries are in the effort of creating more added value with fewer resources, it becomes compulsory to encourage and support these activities on a national basis.

Significant developments have been achieved in Turkey in the last decade. With the "Law on Supporting Research, Development and Design Activities" numbered 5746, which was enacted in 2008, it is aimed to create a real sense of awareness for research and development within the country and to provide various financial supports to the companies. Another aim of this law is to provide patent and utility model registration for products, processes and software having a certain technological value achieved as a result of R&D activities. In this way, Turkey will have a say in the world class through its companies by increasing the number of outputs having high value added patents and utility models.

Keywords: Patent Valuation, Valuation Methods, Corporate Tax Law Exception, Cost-Based Approach, Revenue-Based Approach.

KURUMLAR VERGİSİ KANUNU İSTİSNASI KAPSAMINDA PATENT DEĞERLEME

ÖZ

Son yıllarda pek çok ülkede istikrarlı bir ekonomik büyüme yakalayabilmek amacıyla araştırma ve geliştirme faaliyetlerine hız verildiği görülmektedir. Bu faaliyetlerin önemli bir ölçütü olarak da patent başvuruları gösterilmektedir. Hatta ulusal ve uluslararası alanda yapılan patent başvuru sayısı ve tescili bu alandaki gelişmenin en önemli göstergesi haline gelmektedir.

Dünya Fikri Mülkiyet Ofisi (WIPO) tarafından açıklanan rapora göre, 2014 yılında dünyadaki patent başvurularının %60'ından fazlası ABD, Japonya ve Çin'e ait başvurular olduğu görülmektedir. Türkiye'de ise 2014 yılında yerli firmaların yaptıkları patent başvurusu 4861ve yapılan tescil sayısı 1251 olmuştur. 2015 yılında ise %13'lük artışla patent başvuru sayısı 5512'ye, yapılan tescil ise %38'lik artışla 1730'a yükselmiştir. Buna karşın Türkiye'de faaliyet gösteren yabancı firmaların yaptığı patent başvurusu 2014 yılında 7514 ve tescil sayısı 7279 olmuştur. 2015 yılında ise patent başvurusu %12'lik artışla 8446'ya ve yapılan tescil işlemleri de %15'lik artışla 8370'e yükselmiştir.

Yapısı gereği yüksek harcama kalemlerine sahip olan araştırma ve geliştirme faaliyetleri ve sonucunda elde edilecek olan patent hakkı pek çok ülkedeki mikro bazda çalışan firmaları oldukça zorlamaktadır. Ayrıca ülkelerin daha az kaynakla, daha fazla katma değer yaratma çabası içerisinde oldukları da göz önüne alındığında bu faaliyetlerin ülke bazında teşvik edilmesi ve desteklenmesi zorunlu hale gelmektedir.

Türkiye'de de özellikle son on yıllık dönemde bu alanında önemli gelişmeler kaydedilmiştir. 2008 yılında yürürlüğe giren 5746 sayılı "Araştırma, Geliştirme ve Tasarım Faaliyetlerinin Desteklenmesi Hakkında Kanun" ile ülke içinde gerçek anlamda bir araştırma ve geliştirme bilincinin oluşturulması amaçlanmış ve firmalara çeşitli mali destekler getirilmiştir. Bu kanunun bir diğer amacı da Ar-Ge faaliyetleri sonucunda ortaya çıkan ürün, süreç ve yazılım gibi teknolojik açıdan belirli bir değere sahip olan çıktılara patent ve faydalı model tescili yapılmasını sağlamaktadır. Böylelikle Türkiye'deki firmaların sahip olacağı katma değeri yüksek patent ve faydalı modele ilişkin çıktıların sayısının artırılması ile dünya klasmanında söz sahibi olunması mümkün olacaktır.

Anahtar Kelimeler: Patent Değerleme, Değerleme Yöntemleri, Kurumlar Vergisi İstisnası, Maliyet Yaklaşımı, Gelir Yaklaşımı.

INTRODUCTION

In recent years, research and development activities have been accelerated in many countries to achieve stable economic growth. Patent applications are also regarded as an important measure of these activities. In fact, the number of patent applications and registrations in national and international arena is becoming the most important indicator of the development in this area.

According to a report released by the World Intellectual Property Office (WIPO) in 2014, more than 60% of patent applications in the world appear to be from the US, Japan and China. The first three rankings are received by the US with 61.492, Japan with 42.459 and China with 25.539 patent applications (www.amerikanbülteni.com, 2016).

In Turkey, the number of patent applications filed by domestic companies in 2014 was 4861 and the number of registered applications was 1251. In 2014, the number of applications are increased by 13% to 5512 and the number of registrations are increased by 38% to 1730. Whereas, in 2014, the number of patent applications filed by foreign companies operating in Turkey was 7514 and the number of registered applications was 7279. In 2015, patent applications increased by 12% to 8446 and registrations increased by 15% to 8370.

Patent rights obtained through research and development activities with inherently high cost items are very compelling for small and medium-sized enterprises operating in many countries. Moreover, taken into consideration that countries are in the effort of creating more added value with fewer resources, it becomes compulsory to encourage and support these activities on a national basis.

Significant developments have been achieved in Turkey in the last decade. With the "Law on Supporting Research, Development and Design Activities" numbered 5746, which was enacted in 2008, it is aimed to create a real sense of awareness for research and development within the country and to provide various financial supports to the companies. Another aim of this law is to provide patent and utility model registration for products, processes and software having a certain technological value achieved as a result of

R&D activities. In this way, Turkey will have a say in the world class through its companies by increasing the number of outputs having high value added patents and utility models.

In addition, with the aim of supporting patent and utility model in our country, tax exemption has been applied since 1/1/2015 for gains and revenues obtained through inventions resulting from research, development, innovation activities and software activities realized in Turkey. According to these regulations in the corporate tax law;

- gains and revenues obtained through lease,

- earnings obtained through turnover or sale,

- profits obtained through marketing by serial production in Turkey,

from the inventions through research, development and innovation activities and software activities carried out in Turkey by the taxpayer, the portion attributed to the registered patent or utility model certificate of profits derived from the sale of finished products manufactured in a production process carried out in Turkey are 50% exempt from the corporate tax starting from 1/1/2015.

For this exception to be applicable;

- the patent should be issued by the Turkish Patent Institute (TPE),

- the utility model document should be given by the TPE as a result of the positive examination report,

- the invention subject to patent or utility model document is hired for a certain period of time by an exclusive or non-exclusive license agreement with natural or legal persons in Turkey or abroad,

- the invention subject to the patent or utility model certificate is transferred or sold to domestic or foreign natural or legal person for a price compensation,

- the product subject to the exclusive patent or utility model certificate is manufactured by series production in Turkey and marketed to domestic or foreign natural or legal persons,

- the invention subject to the patent or utility model certificate is either used in the manufacturing processes or manufacturing of these products in Turkey.

It is also essential that the invention is one of the inventions protected by patents or utility model documents, and the patent or utility model documentation is obtained by an investigative system as a result of a positive examination report.

Therefore, for the inventions subject to the exemption application, patent or utility model certificate should be obtained as a result of positive examination report within the TPE registered examination system. However, the exception can only be used within the period of the patented or utility model certified protection provided.

The protection period of the patents granted with the inspected system is maximum 20 years from the date of application to TPE, and the protection period of the utility model documents obtained as a result of the positive examination report is maximum 10 years from the application date to TPE. This exception does not apply to profits and revenues obtained after the end of the protection period of the patented or utility model documented inventions.

The protection period of the patents granted with the system without examination, is 7 years and by the request of the patent owner, if the patent is granted with the examination system before the expiry of this period, obtained profit and revenues from the date of patenting to the end of the protection period with the examination system can be exempted.

1. PRELIMINARY VALUATION REPORT

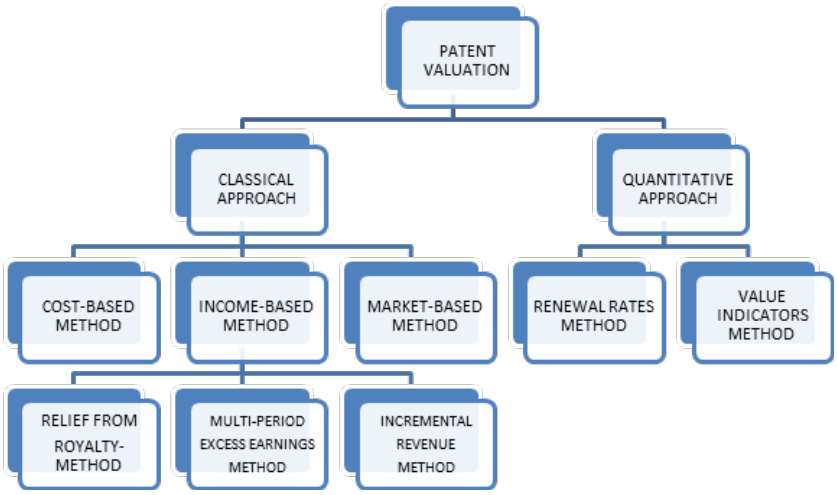
In the first year to be exempted, the Ministry of Finance must issue a valuation report in order to determine the value of the transfer or sale in accordance of the added value to be created. For the preparation of the valuation report regarding inventions with patent or utility model

certificates which will be subject to the first application to the exemption application, it is necessary by the patent or utility model document owners to apply to the Revenue Administration Agency with the preliminary valuation report prepared according to the predetermined format. Once the valuation report is issued and the maximum amount to be deducted from the exemption is determined implicitly, the exemption will begin to be utilized.

Owners of patents or utility models are required to include in their preliminary valuation report the values to be determined separately for the patented or utility model certified inventions and calculations of these values by the following methods. In addition, the preferred method, and the reason for this preference shall also be specified in the preliminary valuation report.

2. PATENT VALUATION APPROACHES

Patent valuation approaches which find application areas all over the world are shown in the following diagram.



When the diagram is examined, it appears that patent approaches are divided into two main groups. The first group, called classical approaches, includes methods that are used extensively. The second group contains qualitative approaches formed in an alternative way.

These methods, which can be considered as evaluations, use the analysis of qualitative indicators of different attributes for determining the value of the patent, instead of analytical data.

Any indicator, which may affect the value of a patent; from legal status to technological level of innovation, from market knowledge to company organization, can be used in this approach. These methods are mostly implemented by responding to a questionnaire prepared using many different criteria. Sample questions to be used in such a questionnaire can be given as: "How do you define the degree of innovation in the patent when current state of the technology is considered?" or "In which stage is the patent?" or "What is the geographic coverage of your reference markets?" (www.aia-istanbul.org, 2016)

However, since the Corporate Tax Law stipulates a valuation only in accordance with classical approaches in patent valuations, qualitative approaches will not be further explained, and classical approaches will be discussed in detail.

2.1. Cost-Based Approach

The cost method is based on the direct relationship between the cost of the patent and its economic value. It includes the calculation of the patent value by means of the expenditures made during the research, development, market research and product development phases of the production (Ildır, 2005: 10).

Cost-based methods are based on the expenditures made on developing the same of the patent or utility model, called as the **reproduction method**, or the similar, called as the **replacement method**, in which current costs are included in the calculations to produce the same or similar technology. These costs include indirect costs, some overhead items such as management costs, direct costs such as labor costs and expenditures for required materials (Kurumlar Vergisi Genel Tebliği Seri No.1, 2015).

The most important advantage of the method is its reliability and simplicity because it is based on past and present costs (consistent measures). Especially in case of newly developed technologies (in

which the asset has not yet generated income), it can give more realistic results when there is a minimum level of economic activity, cost can be predicted within a reasonable degree of reliability, legal protection is weak and the technology is relatively known (www.etkinpatent.com, 2016).

One of its disadvantages is its difficulty to calculate the full cost of the patent, since it is hard to separate normal operating costs and expenditures made on the patented technology. Moreover, since there is no reciprocal relationship between the expenditure on the asset and the value of that asset, economic benefits to be obtained by the patent are neglected. In short, it does not reflect the economic value of the patent. In addition to these disadvantages, the feasibility is limited because it is often not possible to find an alternative technology to the patented technology, having a similar or the same functionality (www.etkinpatent.com, 2016).

Corporate Tax Publications indicate that the **Substitution Method** is to be used by the patent or utility model document buyer; the **Reproduction Method** is to be used by the patent or utility model document owner of that invention.

2.2. Market Based Approach

In this method, patents are to be valued with the assumption that similar patents have similar values, which were recently subject to comparable license or transfer agreements.

There are fewer analytical methods in the market approach than cost and income methods. Valuation variables in cost and income methods are variables, although compatible with market conditions, which are mostly compiled from internal information. Variables of the market based method are more or less non-theoretical, market-oriented variables. Since the collection, organization and analysis of external information are more difficult than internal information, analytical methods in the market, even fewer in numbers, are more complex (Sözer, 2008: 24)

Most commonly used market-based approach methods are called as Sales Comparison Method, Market-Based Replacement Cost Method and Comparative Income Difference Method.

The advantage of the market approach is that it is very useful, practical and easy to understand if similar patented technology and transaction information about this technology are readily available. In addition, as the process is based on realized transactions, the value reached by this method will give the market value realistically. The value reached by the use of a few assumptions is objective, and another advantage is that it contains fewer analytical calculations than other approaches (www.etkinpatent.com, 2016).

Its disadvantages are that there are few comparable patents and transactions, the transaction costs are generally non-public information, the assets subject to the transactions are not always comparable, and if similar patent and transaction information is available, it cannot be guaranteed that the previous patent is valued properly. Moreover, since only the market value of the similar patent is taken into consideration, possible future income of the valued patent is ignored. The variables used are mostly non-theoretical, market-oriented (external) variables, that are more difficult to collect, organize and analyze than internal knowledge (www.etkinpatent.com, 2016).

Corporate Tax Publication has stated that this method can not be applied if there is no other invention having similar features with the existing patent or utility model certificate. Therefore, it will not be necessary to apply the market approach in most patent valuation processes. This approach will be ignored in our sample work because there is no similar previously valued patent.

2.3. Revenue-Based Approach

The Revenue-Based Method is based on the Method of Discounted Cash Flows, which means that the economic benefit expected from the patent over its economic life (as a result of its commercial use) is expressed in the present net cost. While future income is expressed in today's price, time and risk of obtaining that income are also accounted (Sözer, 2008: 28).

There are three important common factors taken into account in all methods of the income-based approach. The first of these is the forecast of the economic income obtained from the patent. This estimate is based on a projection of future income based on the sales realized in previous years. The most significant part is the preparation of income statement tables to be used in determining the estimated future cash inflows.

The second important factor is the period of benefit from the patent. Technically, benefiting from patents can vary according to the technological lifespan and competitive conditions of the patent. However, it is very difficult to determine these constraints. In valuation studies, this period is usually taken as the patent protection period. For example, patents examined by the Patent Institute in our country can have a maximum protection period of 20 years. In this case, the maximum period in valuation studies shall be taken as 20 years.

The third factor is the determination of the discount rate to ensure that future cash flows are discounted to the present value. Calculation methods such as the Capital Asset Pricing Model, Capital Weighted Average Cost Model and Build-Up Method can be used to determine the appropriate discount rate. However, in order to simplify the transactions, official discount rates of the Central Bank of the Republic of Turkey will be taken into consideration in calculation of the discount rate to be used in the valuation report according to the Corporate Tax Publication.

The most important advantage is that it is flexibly adaptable to different valuation purposes and situations. For this reason, it is the most frequently applied method.

In addition, it is reliable due to the fact that the variables such as the patent-related income generating capacity, the distribution of income to patent, patent-related assets and the life expectancy of the patent are identified individually.

Its most criticized aspect is that it requires many forecasts (such as the estimation of income to be generated by using the patent, expected growth trend of income, determination of appropriate discount rate to

be applied in order to express income by present figures, how long the income flow will continue and payment times, etc.). The information required for forecasts (such as the market size, growth trends, company's market shares, risks, pricing information) is not always available and limits the scope of use.

Methods to be used in the income-based approach in patent valuation according to the Corporate Tax Law Publication are briefly explained below (Kurumlar Vergisi Kanunu Genel Tebliği No.8: 2015).

• ***Discounted cash flow method:*** In this method, in which the cash flows attributable to the use of the relevant invention are individually determined and expressed in present values of the corresponding cash flows, the sum of the reduced values gives the value of the patent.

• ***Method of relief from royalty payments:*** The patent holder is presumably not the owner of the patent; however, the same patent is considered as hired from another person, and copyright rates are determined accordingly. The resulting royalty payment is found by multiplying the revenue generated by the patent income with the royalty ratio of the expected revenue, and the sum deducted to the present value of the royalties gives the value of the patent.

• ***Method of Multi-period extra-earning:*** This method is based on the discounted cash flow method in which cash flows derived from the related patent are all attributed to the related asset, and it is assumed that other assets included in the asset of the operating company are also used in generating the patented cash flows. Therefore, other assets are allocated a share of the cash flows generated by their participation in production.

• ***Method of increase in cash flows:*** In this method, which reverses the method of direct cash flows, the difference between the cash flows to be obtained in the presence and absence of the patent is taken into consideration and the its value is reduced to present. In determining profitability ratios, the profitability difference between similar products with expired protection period and similar products that are still in the protection period is taken into account.

3. PREPARATION OF THE PATENT PRELIMINARY VALUATION REPORT

The "Preliminary Valuation Report", which is a prerequisite for the utilization of the Corporate Tax Exemption, must include following main headings and details:

Under the title General Information, it has to contain details such as the applicant's name and surname / title, taxpayer identification number of the applicant and his/her affiliated tax office, address of the applicant, registration number of the patent / utility model document, application and registration date of the patent / utility model certificate to the TPE.

Under the heading General Introduction of Patent / Utility Model; the scope of the invention and areas of use, research, development and innovation activities related to the invention and the extent of the software activities carried out domestically / abroad should be included. Printed publications should also be added to the report.

Furthermore, the report should contain information about the protection duration of the patent / utility model, methods and calculations used for valuation, evaluations for determining the estimated value of the patent / utility model, the selected method and reasons for its selection. In addition, it has to contain expectations from the patent / utility model, such as proposed areas of use, efficiency, cost, income, etc.

Under the heading "Others", all past income and gains from the patent until the first day of the temporary taxation period in which the patent or utility model document is filed by the owner, revenues and profits gained from the patent prior to the registration date of the patent or utility model document, and details worth pointing out (whether it is subject to production in Turkey, whether it is leased or not, etc.) should be included.

Under the heading "Conclusion and Demand", the report must be finalized with the request that "The above-mentioned patent/utility model certificate is qualified to benefit from income/corporate tax exemption in accordance with Article 5/B of the Tax Law numbered

5520. Hereby we kindly request that the approval report related to the industrial property rights shall be prepared and information shall be given to our affiliated tax office."

In this section, which includes the application of our work, calculations according to the methods used in the preliminary valuation report are included. However, in order not to expand the volume of the work, only three valuation methods will be demonstrated in the framework of cost approach and income approach, and the patent value will be determined according to these approaches.

The company, subject to our application, operates in the automotive industry and manufactures air conditioner pipes for main industrial companies. Previously, pipes entering the production were imported and coated by the company. However, as a result of the R&D work, pipes are now produced in Turkey with the pipe machine designed and manufactured, a significant amount of cost is saved and time losses due to the import of pipes from abroad are also prevented.

The pipe manufacturing machine has been examined by the "Turkish Patent Institute" and registered as a patent. The period of protection ends by the end of 2019. Patent valuation studies use past data from 2010 until 2016 and future projection data from 2016 until the end of 2019.

3.1. Valuation Based on Cost Approach

In this approach, the patent value will be determined using the **Reproduction Method**, as mentioned in the previous sections, in which the company possesses a patent due of its own inventions. Based on the product tree of the machine as it was produced, indirect costs including expenditures on required materials, labor costs and some general expenditure items such as management costs are calculated by considering present unit costs.

According to the cost approach in this case study, the present value of the marketing costs for introducing the patented products to the market and the present manufacturing cost of the machine subject to the patent registration are taken into consideration.

When the product tree is examined, it is observed that the machine is composed of four sub- assemblies. In order to simplify the calculations, these four sub-assembly costs are projected on present "EURO" value.

Pipe manufacturing machine parts	Cost in EUR	Rate	Cost in TL
Roll forming parts	267.500	3,17	847.975
Heat induction parts	104.750	3,17	332.057
Cooling line parts	62.500	3,17	198.125
Transmission parts	38.260	3,17	121.284
Present cost of the machine in TL			**1.499.441.-**

Following table shows the "Consumer Price Index" and advertisement expenses of the company for the products manufactured using the patented machine for the years starting from 2010 until present.

YEAR	2010	2011	2012	2013	2014	2015
ADVERTISEMENT EXPENSES IN TL	203.365	218.632	385.669	432.850	767.786	853.429
CONSUMER PRICE INDEX	181,85	200,85	213,23	229,01	247,72	269,54

Correction coefficients based on the consumer price indexes to be used in converting advertisement expenses to current values by the end of 2015 are shown in the table as follows.

YEAR	2010	2011	2012	2013	2014	2015
CORRECTION COEFFICIENT[1]	1,32	1,25	1,20	1,15	1,08	1

Therefore, advertisement expenses, multiplied by the correction coefficients projected to the end of the year 2015, are as follows.

[1] year **2010**= 181,85-269,54 /269,54 = 0,32; year **2011**= 200,85-269,54 / 269,54 = 0,25…

YILLAR	2010	2011	2012	2013	2014	2015
ADVERTISEMENT EXPENSES IN TL	268.441	273.290	462.820	497.777	829.208	853.429

Present costs of the machine (in TL, end of 2015) 1.499.441.-

Present costs of advertisement expenses (in TL, end of 2015) 3.184.965.-

Patent value according to cost approach (in TL, end of 2015) 4.684.406.-

3.2 Valuation Based on Direct Cash Flows

This method requires the estimation of the foreseen revenues primarily from patented sales for the purpose of making a prediction based on the cash flows attributable to the use of the relevant invention, which are then reduced to the present value. It is then necessary to predict the cost of sales and operating expenses occurred in order to reach the estimated sales revenues. In this way, it is possible to find the foreseen interest and pre-tax cash flows to be obtained from patented sales of the company. Taxes, interest expenses, depreciation of machinery and equipment to be used, and investments to be made for the development of the patent are to be deducted from possible cash flows that are likely to directly affect these. Finally, the present value of the patent is calculated by the reduction of the gross cash flows over the years to their present value by taking the discount rate into account.

Following tables have been constructed to explain how to determine the patent value according to "the direct cash flow method".

In the first table, it has been aimed to calculate possible sales income in future years by considering the revenues from the patented product sales realized between 2010 and 2015. In addition, patented sales costs, operating expenses, accrued tax, paid interest rates and average shares of the depreciated amortization within sales income have been calculated. Projections for future years will be made by considering these rates.

	2010	2011	2012	2013	2014	2015
Past Year Sales	33.624.706,45	44.834.422,34	50.655.188,94	67.264.752,76	93.341.379,74	105.805.832,51
Past Year Patented Sales	23.924.190,48	34.774.851,92	35.384.100,90	40.308.571,21	52.168.181,11	75.275.043,62
Future Projection						
Patented Sales (-) (80.81%)	19.687.483,19	26.557.823,74	28.499.308,50	34.014.478,41	42.098.938,10	60.701.004,02
Gross Sales Profit						
Operating Expenses (-) (10,55%)	15,30%	11,50%	13,40%	11,10%	11,10%	12%
EBITDA						
Tax (-) 20%						
Interest (-) 3,75%	3,10%	3,14%	3,38%	3,72%	4,63%	4,57%
FVSK						
Depreciation (+) (5.82%)		1.634.302,91	3.844.674,17	2.231.531,99	2.281.553,66	2.780.270,96
Investments (-)						
Gross Cash Flows						
Discount rate						
Discount Factor (1/(1 + 0,09)						
Present Cash Flow						

In the second table, expected sales revenues are estimated between 2016 and 2019, where necessary information is produced by taking the values from the first table. With this information, gross cash flows of the company are calculated over the years and present values of cash flows are calculated using 9% discount rate. The sum of these values, which is 6.405.374 TL, has been accepted as the patent value.

	2016	2017	2018	2019	
Past Year Sales					
Past Year Patented Sales					
Future Projection	61.313.781	67.368.290	75.095.316	78.947.613	
Cost of Patented Sales (-) (80.81%)	49.547.667	54.440.315	60.684.525	63.797.566	
Gross Sales Profit	11.766.115	12.927.975	14.410.791	15.150.047	
Operating Expenses (-) (10,55%)	1.241.325	1.363.901	1.520.338	1.598.330	
EBITDA	10.524.790	11.564.073	12.890.453	13.551.717	
Tax (-) 20%	2.104.958	2.312.815	2.578.091	2.710.343	
Interest (-) 3,75%	2.299.267	2.526.311	2.816.074	2.960.535	
FVSK	6.120.565	6.724.948	7.496.288	7.880.838	
Depreciation (+) (5.82%)	3.568.462	3.920.834	4.370.547	4.594.751	
Investments (-)	0	0	3.159.011	844.211	
Gross Cash Flows	2.552.103	2.804.113	-33.271	2.441.876	
Discount rate	9%	9%	9%	9%	
Discount Factor (1 / (1 + 0,09)	0,9174	0,8416	0,7722	0,7084	
Present Cash Flow	2.341.299	2.359.942	-25.692	1.729.825	**6.405.374**

3.3. Valuation According to the Relief from Royalty Method

In this method, it is accepted that the patent is presumably hired from another person; and patent values are calculated by multiplying expected sales revenues with royalty rates of similar nature and reducing the generated amounts to the present value.

Sales revenue of the company with respect to past years is shown in the table below.

YEAR	2010	2011	2012	2013	2014	2015
Past year sales	33.624.706,45	44.834.422,34	50.655.188,94	67.264.752,76	93.341.379,74	105.805.832,51

If the company did not own such a patent and if patented products were to be produced for a period of time by obtaining the right to use the patent from another company, it would expect to pay 3% of annual sales royalties for similar patent copyrights. In this case, considering market conditions and requirements of the patented product in 2016-2019, expected sales are shown in the table below. According to our tax law, it is assumed that the tax rate on the patent royalties is 17%, and the value of the patent after tax is calculated as TL 6,125,261 at the end of 2019 with the converted value to present. Details are explained in the table below.

	2016	2017	2018	2019	
Past Year Sales					
Next year projection	61.313.781	67.368.290	75.095.316	78.947.613	
Copyright rate (3%)	3%	3%	3%	3%	
Value attributed to patent	1.839.413	2.021.049	2.252.859	2.368.428	
Withholding rate (17%)	183.941	202.105	225.286	236.843	
Value after tax	1.655.472	1.818.944	2.027.574	2.131.586	
Discount rate (9%)	9%	9%	9%	9%	
Discount Factor (1 / (1 + 0,09)	0,9174	0,8416	0,7722	0,7084	
Present value	1.518.730	1.530.823	1.565.692	1.510.015	**6.125.261**

CONCLUSION

Within the patent valuation report prepared within the scope of the Corporate Tax Law Exception, it is required to explain the calculation of the patent values according to certain methods and the reasons for using them. It is therefore necessary to emphasize in what extent the calculated patent value according to the selected method reflects the reality and what advantages it has with respect to other methods.

The most significant disadvantage of cost-based approaches in the spotlight we have made in the previous sections is that it is difficult to

fully calculate the patent cost because it is hard to divide the company's operating costs and the expenditures made on the patented technology. Moreover, since there is no reciprocal relationship between the expenditure on the asset and the value of that asset, it neglects the economic benefits to be provided by the patent. In short, it does not fully reflect the economic value of the patent. It's known that in the case of newly developed technologies (in which the asset has not yet generated income), it can give more realistic results when there is a minimum level of economic activity, cost can be predicted within a reasonable degree of reliability, legal protection is weak and the technology is relatively known.

However, the fact that the patent subject to our study, was in use for a long period of time and a patent which has earned a considerable income during this period constitutes a justification that the patent value calculated according to this method should not be taken into consideration. Moreover, this method is more abstract than other methods, since it can not exactly measure how much of the expenditure made on the marketing and advertisement of patented products reflects the patent value.

Another method, used in the preliminary report, is the calculation of the patent value on the basis of payment of relief from royalties derived from a fully patented product, and is a quite simple calculation method. However, in order for this method to be reliable, it is necessary that the determined royalty rate reflects an accurate value compared with similar products in market conditions. Because of the fact that there is no patent exchange market in our country, where similar patents are easily valued by classification and transfer, royalty rates are usually based on unreliable numerical data, which are more or less determined by the individual company. Thus, the higher the royalty rate, the higher the patent value becomes, which makes it more debatable to which extent it reflects the reality. For this reason, we have concluded that the patent value we determined by this method should not be taken into consideration.

Finally, the Direct Cash Flow Method, which is the latest technique used in the preparation of the preliminary report, is based on the determination of the patent value by considering the gross cash flows resulting from deducting the sales costs incurred to reach these incomes starting from the anticipated patented product sales revenue

in the future. Patent value is found by calculating the present value of the net cash flows obtained by deducting tax expenses from the gross cash flows, investments made by the company, depreciation of the machines used to produce the patented product and interests incurred. Thus, monetary amounts of related expenses are also taken into consideration in determining the patent value as expenditures made on patents are not included on one-to-one proportion in the patent value.

We conclude that the valuation method, which is the calculation of the resulting net cash flow reduced to the present by considering all expenditures made on the patent and revenues obtained from it, is the most appropriate method which constitutes our preferred approach. Therefore, by using the direct cash flow method, the patent value in the preliminary report is calculated as 6.405.374.TL.

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ÖZET

Türkiye'de de özellikle son on yıllık dönemde AR_GE alanında önemli gelişmeler kaydedilmiştir. 2008 yılında yürürlüğe giren 5746 sayılı "Araştırma, Geliştirme ve Tasarım Faaliyetlerinin Desteklenmesi Hakkında Kanun" ile ülke içinde gerçek anlamda bir araştırma ve geliştirme bilincinin oluşturulması amaçlanmış ve firmalara çeşitli mali destekler getirilmiştir. Bu kanunun bir diğer amacı da Ar-Ge faaliyetleri sonucunda ortaya çıkan ürün, süreç ve yazılım gibi teknolojik açıdan belirli bir değere sahip olan çıktılara patent ve faydalı model tescili yapılmasını sağlamaktadır. Böylelikle Türkiye'deki firmaların sahip olacağı katma değeri yüksek patent ve faydalı modele ilişkin çıktıların sayısının artırılması ile dünya klasmanında söz sahibi olunması mümkün olacaktır.

Ayrıca ülkemizde patent ve faydalı modelin teşvik edilmesini sağlamak amacı ile, 1/1/2015 tarihinden itibaren Türkiye'de gerçekleştirilen araştırma, geliştirme ve yenilik faaliyetleri ile yazılım faaliyetleri neticesinde ortaya çıkan buluşlardan elde edilen kazanç ve iratlara yönelik istisna uygulaması da getirilmiştir. Kurumlar Vergisi Kanun'da yapılan bu düzenleme kapsamında, kurumlar vergisi mükellefleri tarafından Türkiye'de gerçekleştirilen araştırma, geliştirme ve yenilik faaliyetleri ile yazılım faaliyetleri neticesinde ortaya çıkan buluşların;

- Kiralanması neticesinde elde edilen kazanç ve iratların,

- Devri veya satışı neticesinde elde edilen kazançların,

- Türkiye'de seri üretime tabi tutularak pazarlanmaları halinde elde edilen kazançların,

- Türkiye'de gerçekleştirilen üretim sürecinde kullanılması sonucu üretilen ürünlerin satışından elde edilen kazançların patentli veya faydalı model belgeli buluşa atfedilen kısmının %50'si 1/1/2015 tarihinden itibaren kurumlar vergisinden müstesnadır.

Bu istisnanın uygulanabilmesi için,

- Patentin, Türk Patent Enstitüsü (TPE) tarafından incelemeli sistemle verilmiş bir patent olması,

- Faydalı model belgesinin, TPE tarafından olumlu araştırma raporu sonucunda verilmiş faydalı model olması,

- Kiralama, patent veya faydalı model belgesine konu buluşun yurt içi veya yurt dışındaki gerçek veya tüzel kişilere inhisari (exclusive) veya inhisari olmayan lisans sözleşmesiyle belirli bir süre için kiralanmış olması,

- Devir veya satış, patent veya faydalı model belgesine konu buluşun yurt içi veya yurt dışındaki gerçek veya tüzel kişilere bedel karşılığı satılmış olması,

- Seri üretime tabi tutularak pazarlama, münhasıran patent veya faydalı model belgesine konu özgün ürünün Türkiye'de üretilerek yurt içi veya yurt dışındaki gerçek veya tüzel kişilere satışa sunulmuş olması,

- Üretim sürecinde kullanma, patent veya faydalı model belgesine konu buluşun, üretimi Türkiye'de gerçekleştirilen ürünlerin üretim sürecinde veya bu ürünlerin imalinde kullanılmış olması gerekmektedir.

Ayrıca buluşun, patent veya faydalı model belgesi verilerek koruma altına alınan buluşlar arasında olması ve buluşa ilişkin incelemeli sistemle patent veya olumlu araştırma raporu sonucunda faydalı model belgesi alınması şarttır.

Dolayısıyla, istisna uygulamasına konu edilecek buluşlar için TPE tarafından tescil edilmiş incelemeli sistemle patent veya olumlu araştırma raporu sonucunda faydalı model belgesi alınması gerekmektedir. Ancak istisnadan, patent veya faydalı model belgesi için sağlanan koruma süresi aşılmamak kaydıyla yararlanılması mümkündür.

İncelemeli sistemle verilen patentlerde koruma süresi, TPE'ye başvuru tarihinden itibaren en fazla 20 yıl, araştırma raporu sonucunda alınan faydalı model belgelerinde ise koruma süresi TPE'ye başvuru tarihinden itibaren en fazla 10 yıldır. Bu kapsamda, patent veya faydalı model belgelerine konu buluşlardan, patent veya faydalı model belgesinin koruma süresinin sona ermesinden sonra elde edilen kazanç ve iratlar için bu istisnadan yararlanılamayacaktır.

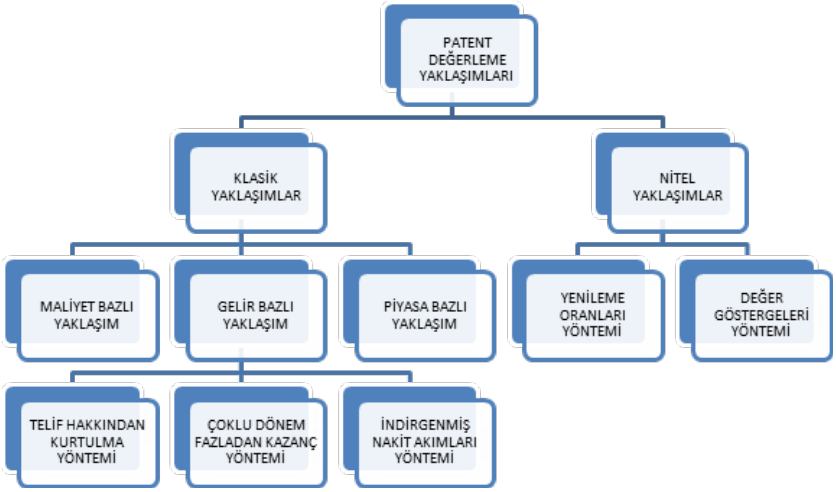
İncelemesiz sistem ile verilen patentlerde koruma süresi 7 yıl olup bu süre sona ermeden patent sahibinin talebi üzerine yapılan inceleme sonucunda, incelemeli sistemle patent verilmesi halinde, incelemeli sistemle patent verildiği tarihten itibaren kalan koruma süresinin sonuna kadar elde edilen kazanç ve iratlar için istisnadan yararlanılabilecektir.

İstisnadan yararlanılacak ilk yıl, oluşturacağı katma değer dikkate alınarak buluşun devri veya satışı halindeki değerinin tespitine yönelik olarak Maliye Bakanlığı tarafından değerleme raporu düzenlenmesi şarttır. İstisna uygulamasına ilk defa konu edilecek patentli veya faydalı model belgeli

buluşlarla ilgili olarak değerleme raporunun düzenlenmesi amacıyla, patent veya faydalı model belgesi sahipleri tarafından, belirlenmiş formata göre hazırlanacak ön değerleme raporuyla Gelir İdaresi Başkanlığına başvurulması gerekmektedir. Değerleme raporunun düzenlenmesinden ve istisnadan yararlanılacak azami tutarın kesin olarak tespit edilmesinden sonra, istisnadan yararlanılmaya başlanacaktır.

Patent veya faydalı model sahipleri, ön değerleme raporunda, patentli veya faydalı model belgeli buluşlar için aşağıdaki yöntemlere göre ayrı ayrı tespit edilecek değerlere ve bu değerlerin tespitine ilişkin hesaplamalara yer vermeleri gerekmektedir. Ayrıca, bu değerlerden hangisinin tercih edildiği ve tercih edilme nedenleri ön değerleme raporunda ayrıca belirtilecektir.

Tüm dünyada uygulama alanı bulan patent değerleme yaklaşımları aşağıdaki şemada gösterilmektedir.



Şema incelendiğinde patent yaklaşımlarının iki ana gruba ayrıldığı görülmektedir. İlk grup klasik yaklaşımlar olarak adlandırılan ve yoğun olarak kullanılan yöntemleri içermektedir. İkinci grup ise alternatif bir anlayış içerisinde oluşturulan nitel yaklaşımlardır. Değerlendirme olarak kabul edilebilecek bu yöntemler, patent değerinin belirlenmesi için analitik veriler yerine, öneminin belirlenmesi gibi farklı nitelikteki nitel göstergelerin analizini kullanmaktadır.