

Initial Stage of the Merdiban Method: Renewed Examination of an Early Practice

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Abstract

An accrual-based state accounting method, titled *Merdiban* (Stairs) was born in the Middle East around the mid 8th Century. Throughout its eleven centuries of existence, the method was in a constant state of development and renewal to better suit the prevailing conditions of the time. Its first traces can be found in the accounting records of Abbasid State (750-1258 A.D.). A. Freiherrn Von Kremer previously examined the accounting record mentioned in this paper in Vienna, 1876. The accounting method would later be improved by the Ilkhanate State from whom the Ottomans would acquire to further improve and use for centuries. This study aims to understand the initial stage of the *Merdiban* method by re-analyzing one of its earliest applications.

Keywords: Abbasid State, Merdiban method, Accounting history, Development of accounting in the Middle East.

Jel Classification: N45, M41, M49.

Özet (Merdiven Yönteminin Başlangıç Dönemi: İlk Uygulamalardan Bir Tanesinin Yeniden İncelenmesi)

8. Yüzyılda, Orta Doğu'da Merdiven adı verilen ve tahakkuk esasına dayanan bir devlet muhasebe yöntemi doğmuştur. Yöntem, 1100 yıllık yaşam süresi boyunca zamanın koşullarına ayak uyduracak şekilde geliştirilmiştir. Yöntem ile ilgili ilk örneklere Abbasi Devleti'nde (750 – 1258) rastlanılmaktadır. Çalışmada analizi yapılan muhasebe kaydı ilk olarak A. Freiherrn Von Kremer tarafından 1876 yılında Viyana'da incelenmiştir. Bu kayıt stili daha sonraki yüzyıllarda İlhanlı Devleti ve Osmanlı Devleti tarafından geliştirilerek devlet muhasebesinde kullanılacaktır. Çalışmanın amacı Merdiven muhasebe yönteminin ilk örneklerinden bir tanesini yeniden analiz ederek yöntemin başlangıç dönemini anlayabilmektir.

Anahtar Kelimeler: Abbasi Devleti, Merdiven Yöntemi, Muhasebe Tarihi, Orta Doğu'da Muhasebenin Gelişimi.

Jel Sınıflandırması: N45, M41, M49.

1. Introduction and motivation

Almost a millennium ago, around eleventh century, the Middle East was an economically advanced region of the world, as measured by standard of living, technology, agricultural productivity and literacy. Historical records indicate that three states in the Middle East, namely the Abbasid State (750-1258 A.D.), the Ilkhanate State (1251-1353 A.D.) and the Ottoman Empire (1299-1922 A.D.), practiced the *Merdivan* (ladder) method as a method of state accounting (Darling, 2008) (Otar, 1994). The method was named as such because it records the main amount on top and items making up the main account are written below one another in a manner similar to rungs of a ladder (Ekler, 1953). This method, in fact, was born during Abbasid reign (Güvemli, 2007, p.1). The Mongolians who have wiped out the Abbasids have established the Ilkhanate State in today's Iran; they developed and gave its name to the method. At the beginnings of its establishment, Ottoman

Empire has expanded through west and in order to secure their eastern borders they have paid tax to the Ilkhanate State for some time. During this financial relationship they have learned and improved the method. The method was used as a method of state accounting in the Middle East until falling out of use near the end of the 19th century. The political and economic relationships constituted a continuum among these three states passing the *Merdiban* from one to the other¹.

The information that is necessary for explaining a civilization like the Abbasids could be obtained by various means. While these means could be analyzation of literature, artworks, technologies, and tools, they also could be the accountancy records that show the economic activities. We aim to analyze the initial stage of the *Merdiban* method by benefiting from its relationship with the socio-economic and administrative structure of the Abbasid State. However, we cannot discuss history without documents and a practice oriented accounting history research should take accounting documents

1) It is a known fact that other states were established in and around the periphery of the Middle East at the end of the 8th Century. Most of these states were in close contact with each other and other states in the region. For example the Ghaznavid Empire and the Samanid State had close fiscal and other relations with the Abbasid State. Also the Golden Horde and the Anatolian Seljuk states were also known to have close relations with the Mongols who established the Ilkhanate state. These fiscal, political and cultural relations are mentioned in history books. Most interesting among these relations is the similarity between the structure and organization of bodies charged with the fiscal affairs of the state. Also the similarities between the types of taxes levied and state expenditures of these states are interesting. Consequently the possibility of the *Merdiban* Method being employed in these other states of the 8th Century is ever present. Unfortunately examples of accounting records belonging to states other than the Abbasid State, Ilkhanate State and the Ottoman Empire have not been preserved and are not available for scrutiny. Among these are the following Turkic states and dynasties: Karahan State (840-1211 A.D.) established in the Eastern Turkistan (present day northwestern China, the Ghaznavid Empire (963-1187 A.D.) established in present day Afghanistan and Northern India, the Samanid state (875-1005 A.D.) which reigned in Horosan, Seljuk state (1040-1308 A.D.) in Anatolia and the Golden Horde state (1241-1502 A.D.) of Crimea.

into consideration. In 1876, A. Freiherrn Von Kremer published a work titled “Uber Da Budget der Einnahmen unter der Regierung des Harun Alrasid” in Vienna. He found records of state revenues recorded with the *Merdiban* method belonging to Harun al-Rashid, an Abbasid State Caliph era (766-809 A.D.). We will reanalyze his archival findings to gain an insight into the initial stage of the method. If we can understand the earliest applications of the method, we may understand its evolution through civilizations more clearly and therefore understand the methods effects in today’s Middle Eastern accounting culture.

The period of benefit from the *Merdiban* method covers almost eleven centuries. Double entry accounting system can be considered younger in respect of the *Merdiban* method. The states, which have existed in the Middle East, have applied centralized statist economic policies. There were not many examples regarding the use of this method in the private sector because, due to the dominance of public economics, there were not many private companies. There was a continuous Financial and administrative development during the times of political stability in the region. Administrative developments necessitated a lasting accounting method in other words paved the way for the development of the *Merdiban* method (see Güvemli, 2000, p.41).

The article begins with a literature review on the main researches on the earliest practices of the *Merdiban* method. Further into the study, the common properties in usage of the *Merdiban* method among these three nations are explained. Then, the financial and administrative structure of the Abbasid State, which is the fundamental observation field, is mentioned. Finally, one of the earliest applications of the *Merdiban* method in the Abbasid State is analyzed and the results are evaluated.

2. Literature Review

Carmona and Ezzamel (2006) find the lack of academic interest in studying the relationship between accounting and religion rather perplexing and sparse given the prominence of such research areas in most historical and contemporary societies. Napier (2009) uses the term “Islamic”, and mentions historical research into “Islamic accounting” is only beginning to emerge in English language sources. Said (2003) notes “Middle Eastern” is often equated with “Arab” or “Islamic”. He warns against slipping too easily between these terms. In this study, we choose to use the term “Middle Eastern” rather than “Islamic accounting” to mention the accounting applications of the civilizations which used the *Merdiban* method over the larger Middle Eastern territory. Some of the relevant literature describes Islamic principles such as the *Shari’ah* system and some of it focuses on practices in certain areas, such as the Ottoman Empire and specific countries, including: Turkey, Saudi Arabia, Egypt, India and Syria among others (Buhr, 2009, p.8). The contribution of Tinker (2004) is one of the few exceptions that have sought to move beyond the Christian focus by exploring the link between accounting and Islam, and contrasting that with the case of Christianity. From a Middle Eastern academician’s perspective perhaps, the central contribution to Turkish literature is the four-volume history of Turkish state accounting *Türk Devletleri Muhasebe Tarihi (Accounting History of the Turkish States)* by Oktay Güvemli (Napier, 2009, p.135). He can be considered fortunate that the public sector accounting in the Middle East and its historical traces preserved in public records such as the Turkish Republic Prime Ministry General Directorate of State Archives Department of Ottoman Archives present accounting historians with significant opportunities to extend the impressive achievements of the past decades.

Accountancy of the Abbasids has been neglected by accounting historians. However, there are several books and papers dealing with the financial structure of the Abbasids. Michele Campopiano (2012) demonstrates the reasons behind the decline of the tax revenues of the Abbasids in the tenth century.

Abbasids are the predecessors of the Ilkhanate, there are few papers and only one book (Elitas, et al, 2008) describing the *Merdiban* methods inheritance within the accounting cultures of the Abbasid State, Ilkhanate State and the Ottoman Empire. The author of this article highly benefited from that study. The contribution of Otar and Solas (1994) gives an insight into one of the earliest practices of the *Merdiban* method by benefiting from the fiscal and socio-economic structure of the Ilkhanate State. They examined *Merdiban* methods relationship with the socio-economic and fiscal structure of the Middle Eastern States. Linda T. Darling (2008) also writes about the early accounting manuals of the Ilkhanate State. She traces the development of governmental bureaucracy, taxation mechanism and documentary forms, and she seeks to estimate when and how the Ilkhanate finance manuals came into use in Ottoman administration.

The contemporary literature of *Middle Eastern* or *Islamic* accounting has been an era of considerable growth in recent years, and offers extensive prescriptions for financial and management accounting consistent with *Shari'ah* principles. Further development in this area can be achieved as accounting historians become more aware of the use of accounting information by those outside the field, such as economic, social and political historians (Napier, 2009, p. 136).

3. Fiscal and Administrative Affairs of the Abbasid State

Having talked about the common factors among these three empires, it is now possible to examine fiscal administration and the accounting infrastructure of the Abbasid State by giving special attention to the main political figures and administrative divisions. Then, state revenues and expenditures will be explained.

3.1. Fiscal Administration and Accounting Infrastructure

The history of Islamic states in the Middle East starts with the Prophet Muhammad during the 7th century A.D. About a century later, the Abbasids came to power, and governed over the Islamic State for over five

centuries between 750 and 1258 A.D.² Abbasids developed a particular fiscal administration and accounting infrastructure to meet the increasing demands of a large empire by expanding the state's governing scheme whose foundation was laid down during Abbasid's predecessors. The main political figures of the fiscal administration and accounting infrastructure in the Abbasid State can be listed as follows:

The heads of state after the Prophet were called *Caliphs*. The Caliph was both the Head of State and the religious leader of the Islamic State. This was always so during the time of the *Four Rightly Guided Caliphs*, the Umayyad dynasty and the Abbasid dynasty (Erkan, et al, 2007b, p.2).

Arabic state was under the influence by Persians and Byzantine political structures. As the territory of a state reaches a certain size, it is inevitable that the head of state needs aides organized in a hierarchy to rule over the territory. In the Middle Eastern Islamic State development and influence of vizierate corresponds to the Abbasid dynasty. While a vizier (minister) uses authority on behalf of a ruler, he must also be accountable to the same ruler. This also requires that affairs of state have to be handled with professionalism. Also accountability requires that certain care have to be taken in recording revenues and expenditures of the state (Erkan, et al, 2007b, p.2). In the Abbasid dynasty, vizierate was separated into two sections, namely *Tefviz* and *Tenfiz*. Vizierate *Tefviz* had infinite power however Vizierate *Tenfiz* had an executive function (Aykaç, 2007, p.21).

As the territory of the state grew larger and larger, the workload of viziers increased. Therefore, they started needing aides for certain duties. *Katibu'r resail and Katibu'l Harac* are some of the titles given to these aides. *Katibu'r resail* was the name of the officials who were in charge of

2) The Prophet Mohammed spread Islam between 622 and 632 A.D. After his death in 632 A.D. the era of the Four Rightly Guided Caliphs (Abu-Bakr, Omar, Othman, and Ali) began (632-661 A.D.). After Ali's death in 661 A.D. the Umayyad dynasty (661-750 A.D.) took the control. During the Umayyad dynasty the territory of the Middle Eastern Islamic State grew considerably. Following the Umayyad's, the Abbasid dynasty's reign began.

writing the edicts of the Caliph down and having them sent to necessary points throughout the state. *Katibu'l harac* were the officials who were in charge with the fiscal affairs of the state, and was head of the organization for collection of taxes and performance of the expenditures. This official was also responsible for the records of the state's accounts. Starting from the Abbasids, accountants were called *katip* (lit. writer or ledger keeper) instead of *muhasip* (account keeper) throughout centuries (Aykaç, 2007, p.25). The reason for such usage is that because the word *katip* was used in this title. It is observed that a *Divan* was established for each *kitabeta*. The *Abbasid Divan* is mentioned below.

3.2. Administrative Structure

The capital of the Abbasid State was Baghdad. When the territory under Abbasid sovereignty reached a vast scale encompassing parts of Africa and Asia, the administrative structure was organized along provinces. Each province was ruled over by a *vali* (governor). This structure and title *vali* is still in existence in modern-day Turkey and they are responsible to the central government in all affairs of the provinces including state accounting. The Abbasid State was organized into twelve different provinces. The most prominent of these were Kufe, Sevad, Basra and *Dicle* (Tigris) in Iraq, Yemen, Horosan, Cezire (Armenia and Azerbaijan), Damascus and Egypt. This also shows that the territory of the Abbasid State covered areas ranging from Northern Africa to the Caucasus to Persia along with the Arabian Peninsula (Yıldız, 1988, p.39). Structuring of the fiscal organization according to the administrative structure was inevitable. Accountants with important responsibilities who served under the authority of the governors performed record keeping of central fiscal administration. Also religious officials were known to have an influence on revenue and expenditures in the provinces.

Divans were government offices of the Abbasid State similar to ministries of modern governments. *Divan* is a name commonly used in the Middle Eastern states. It was used in Persia and in the Ottoman Empire for centuries. There were more than one *Divan* tasked with the fiscal affairs of

the Abbasid State (Ünal, 1987, p.96). *Divan-ı Ezimme* was responsible for collection of taxes in the Sevad province and keeping accounting records of other provinces. *Divanü-l harac* was responsible for collecting contributions from areas under State sovereignty. *Divanü-l mal* was concerned with payment of government expenditures. *Divanü-l beytülmal* was concerned with government property and their revenues and expenditures. *Beytülmal* was also the government treasury.

3.3. State Revenues

In order to understand the revenues recorded in state accounting, we have to identify the types of taxes.

There is a land tax titled *Haraç* (tribute). It is collected as production or cash. This tax is known to be generally collected from conquered countries. The revenue from this tax is primarily used for the salaries of public administration, the military personnel, and for public works like road, bridge and canal construction in the region where the tax originates. Any surplus is sent to the state treasury in Baghdad. Records for this tax had to be kept in two different places. Some of the records were made in the territory where the tax revenues and expenditures originated and some of the records had to be kept in the capital. This increased the importance of provincial accounting records and had a positive effect on development of the system (Zeydan, 1996, p.84).

In the Abbasid accounting records the word *Haraç* is used in a different way. It is used to refer to the total amount of tax revenue generated by a specific region. For example all of Iran was referred to as the Persia territory and in records statements such as “The tribute of the Persia territory is...” were recorded to refer to total tax revenue from the Persia territory.

Jizya is a tax levied on non-Muslim population and collected in cash. This tax is justified through two points. The first is that individuals obligated to pay this tax were exempted from military service, and their protection was guaranteed by the state. The importance of this tax from an accounting perspective is that records have to be reliable as to how much tax is collected from non-Muslims and how much is levied from each household throughout

the years; both have to be recorded. The records were the basis for determining how much would be levied the following year (Zeydan, 1996, p.89).

Much as the non-Muslim population was taxed with *Jizya*, the Muslim population was obliged to pay the tax called *Zakat*. This is a tax on property levied at the rate of 1/40. This tax was assessed on gold, silver, animals, commercial goods and agricultural products owned. Determining and recording the assessment was generally difficult, but the collected revenue was recorded (Erkan, et al, 2007b, p.5).

All goods and property captured in war are called *Ganimet* (spoils of war). Records of these spoils are important because after wars, spoils are distributed among soldiers. In this manner accounting became a part of any military campaign. This is a type of revenue that was not unique to the Middle East and existed throughout the world (Erkan, et al, 2007b, p.6).

Öşür (customs duty) is a tax levied on merchants going abroad or coming into Muslim lands. It was usually levied at a rate of 5% on goods entering and leaving the country. This was a form of tax that the state always used. Since it was levied at certain posts of entry and exit, its collection and recording was easier than most other taxes (Erkan, et al, 2007b, p.6).

It is observed that throughout the five centuries of Abbasid reign, there were developments in the tax system and the taxes mentioned above were classified into three categories.

The *first* type was called the accounting method (taxes mostly collected in cash) and referred to tax collection in cash. The *second* type was called the *mukaseme* method (taxes on goods) and referred to a tax as a certain percentage of goods produced. The *third* type was called the *muqata'ah* or *mukataa* method (renting out of revenue-generating land by the state) and referred to the offering of revenue-generating land for rent by the state (Güvemli, 2008, p.1827).

3.4. State Expenditures

Examples of accounting records of expenditures by the state are not as numerous as the examples of revenue records. There are records of daily expenditures dating from 892 A.D. According to these records salaries are

the main state expenditures. Those salaries paid by the state are: *nobet ağaları* (head of watch), *kapu oganları* (security guards), *ic agalar* (palace guards), cavalry, special troops, seventeen different types of officials employed in the palace (*muezzin*- reciters of *adhan*, *muneccim*- fortune tellers, *alemdar*- flag carriers, jesters, drummers, etc., soldiers serving as police in Baghdad, slaves, cooks, viziers, *katips*, heads of *Divans*, treasury guards, *tekbirhans*- reciters of prayers). Besides these salaries, palace expenditures to cloth makers, water carriers, tailors, ironmongers, fur sellers, papermakers, carpenters and basket makers are recorded. Other expenses include the purchase of horses and camels for military use, their feed, lamp oil, expenses for the prison, various expenses for the two bridges in Baghdad, hospitals and others. Also large expenses for food and weapons for military units garrisoned in Baghdad are included in the records (Pakalın, 1993a,b,c).

The records show detailed itemization of expenses and that daily records are calculated in groups. Daily expenses of the state are accounted for in approximately thirty groups.

There is not much information about the accounting ledgers where revenues and expenditures of the Abbasid State are recorded. The names of a few accounting ledgers are given in Omar Abdullah Zaid's article (2000, p.73-90) "*Were Islamic Records Precursors to Accounting Books Based on the Italian Method?*" These ledgers that were also used by the Ilkhanate State were: *Defter 'ul Yevmiye* (daily ledger) where expense records were entered daily. *Defter-i Tevcihat* was the ledger where expenses were recorded by type. *Defter-i Tahvilat* was the ledger where revenues from provinces were recorded. It will be seen that these ledgers were kept by the Ilkhanate with the same names but used for different purposes.

4. One of the Earliest Application of the Merdiban Method

The system in question is an accrual-based system. In this system for any given district a record is made in the ledger of the revenue to be accrued at the beginning of the year and the revenues collected are recorded quarterly until the end of the year and this way the revenues are monitored. As the years end approaches the actual collection for the nine months are recorded,

and by adding the expected collection for the last three months the annual collection estimate is derived. From this expected revenue figure, the revenue to be accrued at the following year is calculated and this figure is sent to the district where the revenue is to generate from. By this way, the districts knew before hand the amount they were to pay each quarter and they collected the revenue in a timely fashion (Toraman, Yilmaz and Bayramoglu, 2006, p.120).

One of the earliest application of the *Merdiban* method can be seen in the work titled “*Über Da Budget der Einnahmen unter der Regierung des Harun Alrasid*” written by A. Freiherrn Von Kremer and published in Vienna in 1876 by Alfreed Hölder k.k. Hof- under Universitats Buchhandler.

The same author has another work originally titled “*Über das Einnahmebudget Abbasiden Reiches Vom Jahr H.306 (918-919 A.D.)*” published in 1888 in Vienna by F.Tempsky with the title “*Kaiserlichen Akademie der Wissenschaften – Philosophisch Historische Classe*”. In both titles, *Kremer* included accounting records of the Abbasids daily revenues and expenditures.

In Table 1, records of state revenues recorded with the *Merdiban* method belonging to Harun al-Rashid era (766-809 A.D.) are shown.

Harun al-Rashid, Abbasid State’s Caliph, ruled from Hegira³ 148-49 to 192-93 (from 766 to 809 A.D.) *Kremer* expressed that these records were from Hegira 156-57 to 169-70 (774-75/786-87 A.D.) and these records were took part in the book written by *Cahsiyari* who wrote the history of Abbasids’ Viziers (passed away on Hegira 330 or 331 (942 or 943 A.D.). It can be understood that this record was one of the earliest application of the *Merdiban* method written as original in point of formal and content by *Cahsiyari*.

Kremer (1876) mentions that the individual responsible for writing this budget can be considered as a clerk or a writer and this clerk is a state official. Thus, he mentions that the name of this clerk does not exist in the recordings. There is no front page either.

3) Hegira or Hijra, as an Arabic word meaning migration. Hegira represents the emigration of Muhammad and his followers to the city of Medina in 622 CE, marking the first year of the Islamic Calendar.

Table 1:
A Record in the State Accountancy of the Abbasids with the *Merdiban* method
(775 – 786 A.D.) (157-58/169-70 H.)

<p>State _____</p> <p>Taxes in kind and cash and their places which come to the state treasury for every year in Harun al Rashid Era</p> <p style="text-align: center;">Drachma _____</p> <p style="text-align: center;">530.312.000</p> <p>Total _____ Total _____</p> <p style="padding-left: 40px;">buying as goods as cash</p> <p style="padding-left: 40px;">5.706.000 Dinar 404.780.000 Drachma</p> <p style="padding-left: 40px;">1 Dinar 22 Drachma</p> <p style="padding-left: 40px;">125.532.000 Drachma</p> <p style="padding-left: 40px;">A kinds _____</p> <p style="padding-left: 40px;">of Tax and names of provinces</p>					
<p>pomegranate ----- and quince</p> <p style="padding-left: 20px;">from Iran from Rey</p> <p style="padding-left: 20px;">pomegranate pomegranate</p> <p style="padding-left: 20px;">quince 1.000 portion</p> <p style="padding-left: 20px;">150.000</p> <p style="padding-left: 20px;">portion</p> <p>Salt-----</p> <p style="padding-left: 40px;">from Armenia</p> <p>Plum-----</p> <p style="padding-left: 40px;">from Rey</p> <p style="padding-left: 40px;">1.000 Riti</p> <p>Provisions-----</p> <p style="padding-left: 40px;">from Sind</p> <p style="padding-left: 40px;">with Kufe meter</p> <p style="padding-left: 40px;">1.000.000 vakir</p>	<p>Raisin-----</p> <p style="padding-left: 20px;">from Ecnadussam from Humus</p> <p style="padding-left: 20px;">300.000 1.000</p> <p style="padding-left: 20px;">Riti Rahile</p> <p style="padding-left: 40px;">from Iran</p> <p style="padding-left: 40px;">1.000 Riti</p> <p>Wax-----</p> <p style="padding-left: 40px;">from Isfahan</p> <p style="padding-left: 40px;">20.000 Riti</p> <p>Indian Cherry-----</p> <p style="padding-left: 40px;">from Iran</p> <p style="padding-left: 40px;">20.000 Riti</p> <p>Cummin-----</p> <p style="padding-left: 40px;">from Kirman</p> <p style="padding-left: 40px;">100 Riti</p>	<p>Honey-----</p> <p style="padding-left: 20px;">from Hamadan from Musul</p> <p style="padding-left: 20px;">and Bestaki</p> <p style="padding-left: 20px;">13.000 Riti 20.000 Riti</p> <p style="padding-left: 20px;">from Isfahan from Cilan</p> <p style="padding-left: 20px;">20.000 Riti 20.000 Riti</p> <p>Sugar-----</p> <p style="padding-left: 40px;">from Ahvaz</p> <p style="padding-left: 40px;">30.000 Riti</p> <p>Syrup-----</p> <p style="padding-left: 40px;">from Hamadan and Destebi</p> <p style="padding-left: 40px;">1.000 menn</p> <p>Persimmon-----</p> <p style="padding-left: 40px;">from Kirman</p> <p style="padding-left: 40px;">20.000 Riti</p>			

Table 1 (Continued)

aqueous distillate of rose from Iran 30.000 bottles	19	Parget Soil from Savad 292 ritl	18	Perfumes from Iran 50.000 ritl	17
Different Clothes from Al Hambra 6.700 items from Al Hambra 500 clothes from Basra 200 clothes from Negran 200 clothes	22	Clothes and fabrics from Armenia 20 rugs from Africa	21	Agalloch tree clove, coconut 300 ritl from India 150 ritl	20
Shoes 2.200 pairs of	25	Horse from Cilan 100 pieces Bird from Armenia 30	24	Elephant from Sind and vicinities 3 herds	23
		from Cilan 20 clothes from Anatolia	26	from Sind 150 ritl	
<p>Revenue from Baghdad was equal to this amount according to Kudama bin Cafer's information after great fire of Baghdad Archives in Hegira 204 (815 A.D.) during the conflicts created by Emin Begh</p>					

Note: The figures on the records above are explained below⁴.

Records were written in amounts, but total sum of the different goods calculated and written as *drachma* (400th part of an *oka*) and *dinar* on the beginning of records. These goods were amounted to 125.532.000 *drachma* (5.706.000 *Dinar*) as two pages. In these years, it appears from explanations on the beginning of records that state revenues were collected as both goods and cash. There are no details about records of taxes collected as cash. But, it can be understood that the total amount of cash revenues are 404.700.000 *Drachma*. Total of goods and cash were 530.312.000 *Drachma*. Kremer operated fixed price and transformation to the amount of these goods. However, due to out of accounting regime and the *Merdiban* method, these calculations aren't mentioned in this paper.

It can be seen that different kinds of measures were used for amount of goods. One of them was *ritl*, a weight of 333, 6 grams (Inalcık, 2004, p. 240-273).

4) The author of this paper with a view to benefit on explanations placed the numbers over the entries.

It was numbered to relating articles with state revenues as amount in the records. There are three kinds of goods in 5th to 26th articles. First group of them are fruits and foods in 5th to 26th articles. Second group were made from beverages, soils and clothes in 18th to 20th and 25th articles. Last group made from animals as state revenues in 23rd, 24th and 26th articles. The event written at the end of the table is about the great fire of Baghdad Archives, which occurred during war between sons of Harun al-Rashid in Hegira 204 (820-21 A.D.). It appears that auxiliary documents including these records were rescued from that great fire of Baghdad Archives. That is because these records contain data from Hegira 158-59 to 170-71 (From 776 to 787 A.D.).

5. Findings

For a clear understanding of the mentioned accounting record, we will evaluate the accounting document by benefiting from the given explanations.

The title for the entry, indicating the meaning of the whole entry, is given by extending the last letter of the first word of the record in a straight line. This is a feature that was preserved throughout the lifespan of the method and used to separate entries. In all items of the record this extension of letters can be seen.

Portions of the revenues were collected in cash and a portion in goods. The sum total was recorded at the top and the two components, cash and goods, were recorded under the total amount. The method would get its name *Merdiban* (stair) five centuries after this record - at the beginning of the 14th Century while being used by the Ilkhanate State. Recording of the main amount on top with components below it in the style of steps of a ladder would continue throughout the life of the method.

The monetary units are the *Dirhem* (*Dirham*) and the *Dinar*. But since the totals are given in *Dirhems*, attention was given to ensure the recording of both revenues in *Dirhems*. The rate of *Dirhem-Dinar* equivalence was set at 22 *Dirhems* to a *Dinar*. The rate of equivalence (rate of exchange) was always included in the *Merdiban* method.

Before progressing to tax types a general title was sought. This title was written as tax to explain that the records were concerned with the taxes collected. It can be observed that such titles were always given. After writing this elongated word, tax, horizontal and vertical lines were drawn in the ledger. These lines were omitted from practice by the Ilkhanate State and never reused.

Collected taxes were recorded independently from left to right. There are 22 items in the record. Each item relates to goods collected as tax. The first item is about honey collection. First, the name of the good is recorded followed by how much of the good is collected and from which *vilayet* (province) it is collected. Depending on the good, the amount is shown as the number of items collected or a weight measure is given. In the 22 items recorded 22 different types of goods are mentioned. It is understood that the practice of recording goods by amounts continued for a long period of time. Amounts of goods were recorded for the Ilkhanate State as well. In the Ottoman Empire recording of goods can be observed in amounts too. But with time, as the cash collection of taxes increased, recording of goods by amount was abandoned and records were made of values.

An explanation at the end of the record found by *Kremer* is given. This explanation states that a fire broke out in Baghdad, during 820-21 A.D. (204 H) during the war between Harun Al-Rasheed's sons following his death, that consumed many of the accounting ledgers, but records were restored by *Cahsiyari* according to the information given by *Kudama Bin Cafer*. It can be gathered from this that the record in question was not an original document but a restoration consistent with the accounting method of the time.

It is indicated in *Kremer's* book that these records belong to a time somewhere between 775-786 A.D. (Hegira 157-58/169-70).

This accounting record shows the annual revenue of the state. The specific type of ledger where this record belongs to couldn't be determined with certainty. But, there must be main ledger accounts where these revenues would be required throughout the year. Without a main ledger account it would be impossible to keep track of goods coming from a province at different times of the year. The main ledger records that surely must exist have not survived till the present day but both daily ledger and main ledger

entries belonging to the Ilkhanate State and the Ottoman Empire are still preserved.

This initial sample would later be developed further by the Ilkhanate State from whom the Ottomans would acquire the method to further develop and use it for centuries.

6. Conclusion

The first applications of the *Merdiban* method, which was used in state accounting, can be observed in the 8th Century Abbasid State. The method was abandoned in 1879 by an imperial edict from the Ottoman Empire. This means that the method was used for at least 1,100 years.

The culture of state structure and administration is a factor that affects public expenditure and its accounting just as it does in revenues. The culture of central organization in the Abbasid State with the Divan and its sub-organizations and provincial organization of *kadi* (Muslim local judge) and sub-organizations is common in the Ilkhanate State and partially similar to the one found in the Ottoman Empire. It is also possible to extend this observation to military organization, which is one of the most important expenditures in all three states.

The Abbasids production culture (cottage economy and provincial economy) has influenced public revenues and the accounting method that is suitable for these revenues. Products based on agricultural and cottage economy shaped these revenues and the commercial culture and the use of money formed the basis of cash taxes.

There are also issues such as secrecy, professionalism, internal audit, conservatism in the preservation of the method and reporting which are related to the discovery and development processes of the method. But these issues are important enough to warrant research in their own right.

There are two limitations of the study. The first limitation is that only one accounting record regarding the time period is examined. The second limitation of the study is that the mentioned accounting example only covers the years 755 and 756 A.D. However the mentioned accounting method was used for more than six centuries.

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Annex 1:

A Record in the State Accountancy of the Abbasid State with the Merdiban method

(775–786A.D.) (Hegira 157-58/169-70)

باسم الله الرحمن الرحيم
في سنة الف من المائتين وخمسة عشر من الهجرة النبوية
التي هي سنة الف من المائتين وخمسة عشر من الهجرة النبوية
في شهر ربيع الثاني سنة الف من المائتين وخمسة عشر من الهجرة النبوية
في شهر ربيع الثاني سنة الف من المائتين وخمسة عشر من الهجرة النبوية

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Annex 1 (Continued):

الطبرستان السياسة من فارس من رطل	الطبرستان الحكم من السجك من فارس من رطل	الطبرستان السياسة من فارس من رطل
الطبرستان السياسة من فارس من رطل	الطبرستان السياسة من فارس من رطل	الطبرستان السياسة من فارس من رطل
الطبرستان السياسة من فارس من رطل	الطبرستان السياسة من فارس من رطل	الطبرستان السياسة من فارس من رطل
الطبرستان السياسة من فارس من رطل	الطبرستان السياسة من فارس من رطل	الطبرستان السياسة من فارس من رطل

اما ان يطرح ملكك في هذه المدينة والخرق وولوين كرسه لربع وما ينسب الى الخصال
 جمع من هذه ليس للمعروف
 للعين مع كل العلة واضافة الى هذا النجم
 مال الاله مما هو ان

الذليل
 مال الاله من الجاهل من الجاهل
 وبارك من ربه وبنامه من ربه خلفه للعدو ما به او حسن عاين عيسى وروحي من الخلق عاين ربه
 ملكك رعا حيا لغيره فاستغنى الخلق بما فيه لانه عمل له في هذا المكان وجمعه
 مع انما ان الغلات من هذا
 المعنى اذ ان الاله ما ركبها