

# Accounting Awakes in the Orient

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## **Abstract**

Turkey is a land of accounting experience.

The Tanzimat and the alphabet reform shook up bookkeeping methods, and a relationship between the processing of debit and credit and writing orientation became apparent soon after.

Until the alphabet reform, writing had proceeded from right to left. The Tanzimat created a first culture shock, when Turkish accountants had to integrate European accounting works produced in a right-to-left writing orientation culture.

How was the conflict of orientation in order to position debit and credit to be resolved? Was the debit to be placed to the right and credit to the left, or the reverse?

Once this antagonism was calmed, a second source of conflict appeared in 1928 with the alphabet reform. With writing orientation changing, were we once again to modify the position of debit and credit from what had been determined previously?

From these goings-on, we learn much about the proper European origin of the position of debit and credit, and by the same hypothesis, about the origin of modern accounting.

**Key words:** Débit, credit, dextroverse, sinistroverse, semitic writing, Ilkhanids.

**JEL Classification:** M 40, M 41, N 15.

## **Foreword**

This study is nothing of a historian's work--that is not my profession. It is simply the gaze of a curious observer.

The history of accounting has already been widely and meticulously well-studied.

I can bring nothing to the subject, if not incoherencies.

My objective is different. That is, to unfold certain courses of logic possibly new ones within the historical context of accounting.

This exercise is based on an observation and feeds itself on

hypotheses necessarily open to criticism.

Pr. Oktay Guvemli's availability was invaluable to me.

## 1. Introduction

### 1.1 Writing

According to *L'Abécédaire des Ecritures* (2000), « whatever the system may be, to write is always to go from one point to another. »

The written word has appropriated any media offered to it (clay, papyrus, bamboo, stone, parchment made of sheep or goat skin, vellum, and paper).

The surfaces of which have been covered in all directions: **from left to right (dextroverse)**, **from right to left (sinistroverse)**, in a spiral, horizontally and vertically (stochéidon), alternating from right to left and from left to right (boustrophedon), and vertically.

Today, there remain three great orientations of writing, distributed schematically as follows: **Semitic writing** (for example Arab and Hebrew) **sinistroverse**; (Chinese, Korean, and Japanese writings) vertical, and finally **dextroverse** writings, of which **Italian** is a part.

### 1.2 Accounting Entries

Accounting preceded writing; then accounting became writing.

Bookkeepers filled large, mysterious volumes with their stories.

Accounting records and literary writings are endowed with common characteristics.

Among them: the orientation of the written word.

In 1928 Turkish President Atatürk imposed a linguistic revolution on his country, which meant nothing less than abandoning the usage of Arabic writing in preference of Latin characters.

This metamorphosis was accompanied by a change in the direction of writing, from "sinistroverse" (right-to-left) to "dextroverse" (left-to-write).

The consequences on accounting were inevitable and the placement

of debit and credit were reversed.

So it was that the scriptural nature of accounting was established. We are thus in a position to view accounting records as a particular literary form worth studying.

What do accounting records teach us?

## 2. Observation

### 2.1 Accounting Technique

Double-entry bookkeeping is reputed to have been born in Italy, probably toward the beginning of the 14<sup>th</sup> Century, and is thus part of a writing culture which expresses itself from left to right.

In the double-entry method, a recorded fact is defined by two correlated criteria: a before and an after, funds and their application, a credit and a debit.

The double-entry accounting doctrine, historically fixed by its popularizer Luca Pacioli (1445-1517), stipulates positioning the debit on the left and the credit on the right. In this way, Pacioli's mathematical summa, written in Italian, the *Summa de Arithmetica, Geometria, Proportioni et Proportionalita*, finished in 1494, teaches us in *Tractatus XI* (treatise), starting from the Distinction IX entitled "Treatment of Accounts and Writings" to Chapter Fourteen: "of all the entries written in the journal, two must be made in the general ledger, put that of the **debtor on the left-hand side** and that of the **creditor on the right-hand side**; never write any debit or credit without inscribing its counterpart. It is there that the balance is born."

### 2.2 Accounting Entries

Let us take the example of the taking-out of a loan of 100 transferred to Company "M's" bank account.

According to the double-entry accounting technique, this transaction produces the following in modern written form:

	Debit	Credit
Bank	100	
Loan		100

Here we see that the funds represented by the loan (situated on the right under “Credit”) are preceded by their application, which is the bank account (on the left under “Debit”).

**It would be more coherent for Westerners, writing from left to right, to situate funds on the left, identified by the credit as an element of the “upstream”, and in correlation, their application identified as the debit, “downstream” to the right.**

Following such logic, the result would be...

	Credit	Debit
Loan	100	
Bank		100

As such, the past is anterior to the present, the funds precede their application...

Which René Delaporte (1926) underlines: “Every accounting event immediately produces a simultaneous exit and entry in two accounts, an exit in one and an entry in the other; therefore, it would have been **logical** to follow the natural order and **to record the exit (or credit) first and the entry (or debit) after...The usage is contrary to this logic.**”

This ordering (of debit/credit), which seems self-evident nowadays, would nonetheless retain all of its coherence if it was to be reversed.

Would accountants be writing backwards then, adopting the orientation of Semitic writing in this way?

For René Thom (1983), “To understand means, first of all, to geometrize.” Using a diagram, let us illustrate this conflict of orientation between Western literary writing—dextroverse in nature—and sinistroverse accounting entries.

### 2.3 Representation of the Balance Sheet

The borrowing entry generates the following simplified balance sheet:

ASSETS-APPLICATION	LIABILITIES-FUNDS
BANK debtor 100	LOAN creditor 100

Let us represent, first of all, the balance sheet of Company “M” by a straight line, supporting the elements of Assets and Liabilities.



Diagram 1. Traditional (sinistroverse) representation of Company M’s balance sheet, showing “Assets”; “Balance Sheet”; “Liabilities.”

We have simplified a classical representation of the balance sheet with Assets to the left and Liabilities to the right.

And yet, as Eugène De Fages (1924) notes: “Let us notice in this connection that Liabilities, which are generally to the right in balance sheets, should be to the left since we have the habit of writing from left to right, and that Liabilities precede Assets. Assets, which are usually to the left should be to the right.”

Let us reconstruct this balance sheet conforming to the latter logic:



Diagram 1(bis). Representation in reverse (dextroverse) of Company M’s balance sheet, showing “Liabilities”; “Balance Sheet”; “Assets.”

Now let us assign to Liabilities the minus sign and to Assets the plus sign, and let us broaden the concepts of Liabilities and Assets.

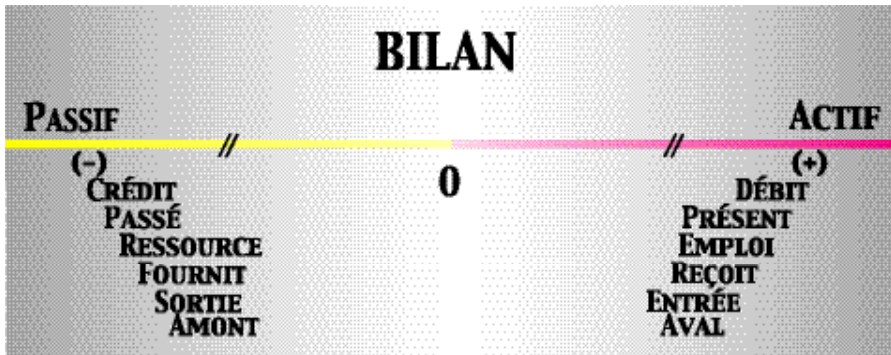


Diagram 1(ter). Balance sheet and elaboration of Company M, showing “Liabilities (-): *Credit, Past, Funds, Supplied, Exit, Upstream,*” and “Assets (+): *Debit, Present, Application, Received, Entry, Downstream.*”

#### 2.4 Incoherence of Orientation on the Straight Line of a Traditional Sinistroverse Balance Sheet

Barbara Tversky (1995) showed that **Anglophone** children conceived of an increase in numbers or the passage of time as a movement **from left to right**. This system of thought is adapted to the reading of a reversed dextroverse balance sheet, whereas **Arabic-speaking** children proceeded **from right to left**, in harmony with the traditional (sinistroverse) representation of the balance sheet.

Writing orientation, therefore, influences mental representation in the ordering of numbers and time.

## **2.5 Questioning**

Did accountants write backwards then, adopting in this way the orientation of Semitic writing?

Let us attempt to form a hypothesis about the origin of modern accounting based on one clue : the similarity of accounting records and Semitic writing (from right to left).

As the founder of paleontology M.G.CUVIER wrote, *“Give me a single bone, or even a single fragment, and I will reconstitute the entire animal!”*

## **3. Hypotheses**

### **3.1. Turkey: Land of Asylum to Memory.**

The high cultural level of Arabs in the Middle Ages, paired with their mastering of paper fabrication, led to the founding of numerous, rich libraries.

Long-term, bacteria, nibbling insects, humidity and mold would leave their book collections cancerous.

Short-term, the danger was pillaging.

In the middle of the 13th Century, the capital of Baghdad saw the destruction of its 36 libraries (the most richly endowed in the world) at the hands of the Mongols.

Legend says, *« When the Mongols, under Hulagu, took Baghdad in 1258, they cast all of the books into the Tigris; this formed a bridge upon which passed the foot soldiers and knights, and the river’s water become black from the ink of the manuscripts. And this bridge and that ink are worth, so it would seem, all the baths of Alexandria.»*

Popular memory conserves traces of this tragedy. As it is written in Aladdin’s tale: *“during the night, the city gates of Baghdad were closed for fear that the heretics would impose themselves and throw books of science*

*into the Tigris.”*

However, Turkey was able to conserve traces of its history and more broadly, that of the the East and Middle East, the Balkans, the Mediterranean region, and that of a part of Africa.

45 million exploitable accounting documents are housed there a veritable Eldorado for researchers.

### **3.2 Kitab-Us Siyakat or *The Book of Accounting***

In Istanbul in 1930, the Professor Zeki Velidi Togan discovered an imposing accounting manual of 277 pages: the “Kitab-us Siyakat,” written in 1363 in Arabic and Persian in a form of shorthand called *Siyakat*.

Siyakat grew to be so synonymous with accounting that its usage became the norm.

The author of Kitab-us Siyakat, Abdullah Muhammed Bin Puser Kiya - el Mezanderani, had dedicated his manual to the reigning vizier at the time, FELEK el Mania, opportunely supplementing the title “Risale-i FELEKIYYE”.

The manual describes a method of MERDIVEN public sector accounting based on the collection and spending of state taxes.

### **3.3 Merdiven Method**

In this accounting system, records are presented from top to bottom.

The page is divided by a succession of horizontal lines barring the blank surface from right to left by extension of the last letter of the last word.

This segmentation separates the accounting entries of the register.

Under the first line of separation figures the total of the transaction to be recorded, and in cascades, the following lines and scissions break down this total into however much money total and any necessary sub-accounts.

This graphic design resembles the steps of a staircase; it was indeed practical to name the method “MERDIVEN” which means “stairs.”

This isomorphism between the title of the work and the cascading architecture of the accounting presentation is more important than it appears.



The fractioning of the accounting statement in horizontal separations isolates the different steps of the transaction to be recorded.

In the same way, this differentiation announces a taking into account of the downstream and upstream, of the beginning and the end, of the funds and their application, and perhaps finally of the debit and the credit.

The MERDIVEN system traverses 3 empires (Arab, Mongol and Ottoman), spanning more than one thousand years.

This accounting system finds its roots in the Arab dynasty of the Abassides, which started in the year 750 with the triumph of the battle of Grand Zab against the Umayyad army. The dynasty was brought to an end five centuries later, in 1258, with the fall of the capital of Baghdad, conquered by the Mongol armies commanded by Hulagu Khan, grandson to Ghengis Khan.

This same Hulagu had founded the Ilkhanid dynasty in Iran two years earlier. The Mongol Empire was to last no more than a century, coming to an end in 1353.

Finally, the Ottoman Empire, from its creation in 1299 until its abolition in 1922, continued to employ this accounting system.

We can stand astonished at the MERDIVEN method's ability to withstand the test of time and civilizations:

Time: Whatever the era, it was always a matter of state bookkeeping, thereby inscribing itself into the history of various empires.

Civilizations: Islam, common to Arabs, Mongols and Ottomans, assured by application of the charia, the same tax treatment for all the three communities.

Another point in common was the similarity in writing orientation. The Arabs (Arabic alphabet), the Mongols (Persian alphabet), and the Ottomans (Arabic alphabet) all wrote from right to left (sinistreverse writing).

### 3.4 The Mongols

We remember the Mongol people as a devastating one, guided by its chief Ghengis Khan whose ambition was to reduce the world to an oversized artificial steppe.

But in the end, Ghengis-Khan admitted that it would be more profitable to administrate his conquests than ravage them. *“The empire had been created on horseback, but could not be governed on horseback.”*

The Mongols had their grip on three great ministries: judicial, postal, and fiscal administration.

The management of the empire was codified by an ensemble of texts, the « YASA », which layed down the founding principles of Mongol international, civil and commercial law with an extreme severity.

As it reads, *“He who takes merchandise (on credit) and goes bankrupt, then takes merchandise once again and again goes bankrupt, then takes merchandise yet again and goes bankrupt yet again must be put to death after the third time.”*

As long as the Mongol borders were stabilized, merchandise, men, and knowledge circulated freely.

As René GROUSSET writes, *“for the first time in history, China, Iran, and the West entered seriously into contact and it was there, in the end, that the unpredicted-as-much- as-fortunate result for the civilization came: the terrible conquest of Ghengis Khan.”*

Marco Polo tells us that many Latins, especially Genoans, travelled to Tabriz, administrative center to the Mongol Empire, to buy commodities coming from Baghdad, India, etc....

Numerous documents on Genoan commerce have been conserved.

The commercial exchanges between Europe and the Orient were accompanied by the movement of ideas and professional customs.

For HOWORTH, *“The art of the printing house, firearms and a great number of details surrounding social life were not discovered in Europe, but imported from the Orient thanks to the Mongolian influence.”*

What then of an eventual transmission of Mongolian accounting knowledge to Europeans?

A noteworthy example concerns the accounting practice of the Ilkhanid for two reasons:

The Ilkhanid Period (1256-1353) corresponds to the beginning of the Italian Renaissance.

The first double-entry accounting book found in Genoa dated from 1340 (Book of the Massari).

Finally, the *pax mongolica* secured privileged relations between Christians and the Ilkhanid chief Hülagu, whose spouse had embraced the Christian religion. Contacts between Italians (Genoans, Florentines, Venitians) and the Ilkhanid became numerous.

The Ilkhanid were able to surround themselves with Arab and Persian practitioners, the knowledge of whom led to the Merdiven method.

### **3.4.1 Accounting Example of the Merdiven Method in the Kitab-Us Siyakat (from the Ilkhanid Period)**

The work Kitab-us Siyakat develops an enriched pedagogy of accounting models. In this respect, it proves to have been well in advance of Europe.

Indeed, while the “Kitab-us Siyakat” was written in 1363, it was in Italy, in 1540 (177 years later), that we can find a veritable European accounting manual, fleshed out with examples, the “*Quaderno doppio col suo giornale novamente composto et diligentissimamente ordinato secondo il costume di Venetia*” written by Domenico Manzoni.

Moreover, in Europe, memoirs were written in a narrative style. From a literary standpoint, the text of the Merdiven system is concise and precise.

Historically, algebra was developed in three steps: rhetorical, syncopated, and symbolic algebra, described by Nesselmann. “*As far as the formal representation of algebraic operations and equations is concerned, we can distinguish, in the development of the science, three historically and fundamentally distinct stages. The first and lowest degree can be called*

*rhetorical algebra: it is a question of calculation entirely expressed in words, which, in the absence of all signs, consists of detailing in ordinary language the complete execution of the calculation...*

*.....We can call the second stage syncopated algebra. The presentation is rhetorical in nature like the previous, but always uses the same abbreviations in the place of words for concepts and operations which recur frequently.*

*.....The third stage, that of symbolic algebra, represents all the forms and operations possible in one language of signs, entirely constituted and independent of oral expression, which renders all rhetorical discourse useless.”*

By analogy, European accounting was in the rhetorical phase when the Ilkhanid practiced an accountancy that we might qualify as syncopated, close to a modern writing form.

Let us turn our attention to a budget record for tax collection. (annexe 1)

Budget(elmet.....lak)

**From** the tax revenues of Baghdad as

Sheep compensation **1 000 heads (1)**

Enumeration.....

**For** the emirs of the city **700 heads (2)**

Emir Ali.....	Emir Kutlug Hoca .....	Emir Alâeddin.....
300 heads	200 heads	200 heads

Enumeration.....

Nökerlik (guards) and staff **300 heads (3)**

Nökerlik.....	Staff.....
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250 heads	50 heads (3)
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4 dinars each makes a total of	4 000 dinars
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These taxes allowing for settlement in kind, the capital of Baghdad budgets a fiscal revenue of **1000** sheep, evaluated at 4000 dinars in the different provinces. (1).

The debts totaling **700** sheep concerns the emirs: Ali for 300, Kutlug Hoca for 200, and Alâeddin for 200 as well. (2).

Baghdad also subjects certain taxpayers to taxation for a total of **300** sheep: The protection of the empire for 250 sheep and that of civil servants' salaries for 50 sheep. (3).

In a modern translation we could say :

Funds (credit): Fiscal receipts for an amount of 1000 heads at 4 dinars per head, totaling 40000 dinars.

Application (debit): Debts of different emirs for a total of 700 sheep and various taxpayers for 300 sheep.

### SUMMARY

↓	CREDIT	4000 dinars	↓
↓			↓
↓	DEBIT	700+300 dinars	↓
↓			↓

←←←←←←←←←← Reading orientation (sinistroverse)

We have already underlined that bookkeeping was executed vertically, from top to bottom.

We notice the generous space between the accounting entries. No attempt at economizing the material used--paper. This leads us to think that

the compact form of writing, Siyakat, was used more for its rapidity than as a way to save space.

### **3.5 Accounting Material**

In the 7th Century, following a military defeat, Chinese prisoners surrendered the technique of paper fabrication to Arab victors.

This new material would become a functional instrument in the expansion of Muslim culture, commercial management, and administration.

At the same time, the Western world was still using parchment which proved to be more costly. In the interest of economy, parchment text was erased using a pumice stone. The material was thus available for new writing. Called a *palimpsest*, this was the second life of a costly parchment.

**The diffusion of paper followed the Silk Road** (which linked China to the shores of the Mediterranean) and didn't reach Italy until 1276.

Europe hesitated to accept using a material which had welcomed the impious writings of the Koran.

So it was that in 1221, Emperor Frederic II prohibited its use in the drawing up of public acts.

As opposed to the Muslim world, the spread of paper in Europe only came about ever so slowly.

For Europeans, economizing the written surface was imperative.

What was an Italian merchant to do if he had to copy Ilkhanid accounting records?

### **3.6 Inverted Accounting Methods**

#### **3.6.1 Ilkhanid Accounting**

First of all, the Italian merchant would write horizontally to eliminate the lines and scissions which consumed space. Then, in order to respect the Western dextroverse writing orientation, he would invert the direction of the Ilkhanid writings, sinistroverse in nature.

ILKHANID ACCOUNTING  
RECORD

EUROPEAN ACCOUNTING  
RECORD

↓(Beginning) CREDIT ↓

↓

↓

↓(End) DEBIT

↓

=====→

DEBIT-CREDIT

↓

↓ Passage from vertical to horizontal (End (Beginning))

&

←←←←←←←← inversion of writing orientation →→→→→→→→

Sinistroverse reading  
direction

Dextroverse reading  
direction

Nothing surprising.

### 3.6.2 The Tanzimat

From 1839, Turkey saw a series of military, educative, judicial and administrative reforms called the Tanzimat.

The objective was to westernize the Ottoman Empire by establishing the rule of law.

Turkey and France continued to maintain their strong and ancient ties.

Without retracing the history of the 1536 treaty of alliance between Francis I and Süleiman the Magnificent, we can recall that in the 18th Century, the French language became the second official language. The homage General de Gaulle paid to Mustafa Kemal in 1968 is also worth noting. In it he writes, "*Of all the glories, ATATÜRK has attained the greatest: that of national renewal.*"

The Commercial Code was of French inspiration.

The Turkish students who had been sent to France favoured French management books upon their return.

Consequently, during the period of the Tanzimat, teaching and accounting were under French influence.

The first book of French accounting was «Muhtasar Usul-i Defteri» translated by Süleyman Arif in 1882.

The Turks were then posed with the problem of cultural confrontation between two opposite writing orientations: dextroverse writing (from left to right) from France and sinistroverse writing (from right to left) from Turkey.

How was this conflict to be settled when it came to the placement of debit and credit in accounting entries?

In France, debit was noted to the left, credit to the right.

How were Turkish accountants to position themselves?

After a period of hesitation, it was decided to invert debit and credit notation with regard to French works.

So it was that debit was finally situated to the right and credit to the left.

This is what M. Saltuk Duran underlines in his research, “THE INFLUENCES OF THE FRENCH ACCOUNTING CULTURE ON OTTOMAN ACCOUNTING THOUGHT IN THE SECOND HALF OF THE XIX CENTURY”:

*“The most important point to consider in the work of Süleyman Asaf is that the assets and liabilities are displaced. This practice is common in the second half of the 19th century as well as the beginning of the 20th century. It is due to the use of Ottoman script, which is written from right to left.”*

#### THE TANZIMAT PERIOD

EUROPEAN ACCOUNTING			TURKISH ACCOUNTING	
DEBIT-CREDIT		=====è	CREDIT-DEBIT	
(Beginning)	(End)	inversion	(Beginning)	(End)
→→→→→→→→		linked to reading direction	←←←←←←←←	
Direction			Direction	
(dextroverse)			(sinistroverse)	

Yet the story does not end there.



### 3.6.3 The Alphabet Reform

Bis repetit.

Modernizing Turkey meant once again drawing closer to the West and adopting its culture.

Writing was part of that reform.

Passing from Arabic writing to Latin writing was to reverse textual orientation.

That is just what President Mustafa Kemal imposed on the Turkish nation in 1928.

The entire communication structure, both written and read, proceeded from right to left in Western fashion.

Once again, accountants found themselves inverting the orientation of their writings.

Debit changed to the left, credit to the right, the natural position for the Europeans, but new to the Turks (annexe 2).

The permutation, as one can easily imagine, was not easy (annexe 3).

### 3.6.4 Consequences of the Reforms

#### 3.6.4.1 The Tanzimat

We have seen that during the Tanzimat period, bookkeepers hesitated to fix the position of debit and credit definitively. In the end, the choice was made to invert the position of debit and credit in French works:

Credit (Funds)

Debit (Application)

<----- Reading direction: sinistroverse, in contradiction with the natural accounting orientation

#### 3.6.4.2 Alphabet Reform

The immediate consequence of passing from Arabic characters to Latin characters in 1928 was as follows:

Debit (Application)

Credit (Funds).

-----> dextroverse reading direction once again in contradiction with the logical accounting direction

The Orient and the Occident exploit therefore a “counter-cultural” accounting system.

In truth it was nothing new. For centuries we have employed the opposite direction using Indo-Arabic figures.

### **3.7 Similarity in Numbers**

Leonard de Pise, better known as Fibonacci, was the first to introduce the Indo-Arab positional decimal numbering system and algebra in Europe in 1202.

Leonard introduces himself in the work entitled LIBER ABACI:

“As my father was a public official away from our homeland in the Bugia customshouse established for the Pisan merchants who frequently gathered there, he had me in my youth brought to him, looking to find for me a useful and comfortable future ; there he wanted me to be in the study of mathematics and to be taught for some days. There from a marvelous instruction in the art of the nine Indian figures, the introduction and knowledge of the art pleased me so much above all else, and I learnt from them, whoever was learned in it, from nearby Egypt, Syria, Greece, Sicily and Provence, and their various methods, to which locations of business I travelled considerably afterwards for much study, and I learnt from the assemble disputations. “

Here are the first two lines from Chapter 1 of Liber Abaci :

“The nine Indian figures are: 9 8 7 6 5 4 3 2 1”

In his presentation of the figures, Leonard respects Arab ordering, as he had learned it, from right to left.

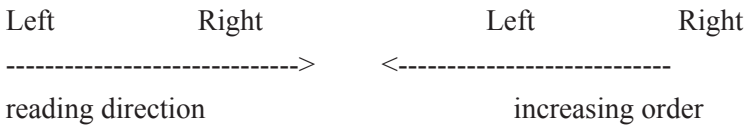
In the statement of transactions wherein Fibonacci designates the first or second figure of a number, he considers the first as that of the ones’ place, the second as that of tens’ place, etc... for the number is read from right to left.

By analogy with their own language, the Arabs write numbers from right to left and thus, for them, according to the increasing order of units. Let us turn to the reading of a number:

For a westerner, the number 14 breaks down to 10, then 4, whereas for a Semitic reader it breaks down to 4, then 10, which is quite rational.

Let us try the exercise on a larger number: 1, 347, 625 for example.

On one hand, we have a left-to-right reading direction, and on the other hand, we have a direction representing the increase of the number from right to left.



This conflict can be managed in two ways: Count the number of places (ones', tens', hundreds'...). In our example, we have seven places. We can conclude that the place of the first figure is the millions' place. Reading the number would start from the identification of the highest order (here 1 million) and proceed in decreasing order.

Otherwise one must follow a first reading from right to left and proceed with a usual reading of the number, from left to right, in order to state it.

In any case, the reading is carried out **in two steps**.

For a Semitic reader, the literal reading proceeds in the rational order of the number, being, in our example, five & twenty & six hundred & seven thousand & forty thousand & three hundred thousand & one million. (A **single-step** reading.)

This reminiscence of inverted direction is undoubtedly even stronger in Germany.

The number thirty-four is stated “**four and thirty**” for a German, recalling a reading of sinistroverse origin.

### 3.8 The Double-Entry

Can we for as much evoke the double-entry method?

Defining the double-entry is not easily done.

We can distinguish three tendencies:

Systemic authors consider that there is no double-entry except in an organic structure: *“For an accounting method to be ‘double-entry,’ each chronological entry must first be entered in debit and credit in two different accounts. The amount of the debited account must be equal to the amount of the credited account. The sums must be defined in a single reference currency. The chronological transactions must then be subject to analysis in a ledger which contains complete and coherent record of accounts; accounts of capital, values, stocks, third parties, and outturn. These accounts, even if not the same in nature, function according to the same rules, obey a predefined hierarchy and allow the recording of whatever type of transaction. The balance allows verifications and periodic controls of arithmetic equalities.”* (DEGOS Jean-Guy).

Fragmentary authors show the division of accounts into two parts, the debit to the left and the credit to the right ; the existence of two registers, one journal for the chronological entries and one recapitulative ledger ; the existence of accounts of people and accounts of values ; the balance sheet outturn account dichotomy.

Finally, minimalist authors as in the French General Accounting Plan note that: *“Writings have passed to what is called the ‘double-entry’ system. In this system all movement or variation in the accounting record is represented by a notation establishing an equivalence between what is calculated as debit and what is calculated as credit in the different accounts affected by this writing.”*

If we retain the minimalist definition from the French General Accounting Plan, Ilkhanid accounting can be qualified as a double-entry system.

#### 4. Conclusion

Knowing whether Ilkhanid accounting is a double-entry system is, in fact, of secondary importance.

The surprise comes in the incoherent placing of debit and credit in relation to our Occidental culture.

As the particular logic would have it, the credit as funds is placed to the left and the debit as an application of those funds is situated to the right.

The question has already given pause to several bookkeepers who have offered answers that can be classed schematically as follows:

##### 1. Psychological Response

*“What probably led to the current order is that the right is nobler than the left and it is nobler to give than to receive.”* E. Léautey & A. Guilbaut.

*“What does a person do when he wants to know the state of his fortune? He takes its inventory. Now by virtue of this natural tendency that we have to count what we possess before counting what we owe, one first takes stock of what he has after which he enumerates what he owes...”* E. Léautey & A. Guilbaut.

##### 2. Logical Response

*“...An exit which supposes a prior entry, an expenditure which supposes a previous receipt. Therefore all accountants note receipts or entries to the left, and to the right of the same page, the expenditures or exits.”* E. Léautey & A. Guilbaut.

##### 3. Indifferent Response

*“And what is arbitrary, is the habit of noting in the left column the positive number and in the right column...the negative number.”* R. Verhille.

*“We must not attach too great of an importance to the rule which places the debit to the left and the credit to the right, it is a matter of convention and we could just as well conceive of an accounting system in which the reverse was observed.”* R. De Roover.

#### 4. Algebraic Response

*“As in Algebra also, accounting expressions and writings are ordered: all the positive numbers as the first member of the equation, all the negative numbers as the second.”* P. Garnier.

Whatever the case may be, we have established thanks to Turkey (two times over: The Tanzimat et the Alphabet Reform), the fusional relationship between accounting and the country’s writing method.

From these recent Turkish events in 1879 and 1928, respectively, we can draw a hypothesis of a similar problem of inverted orientation for those Occidentals who encountered Ilkhanid accounting during commercial transactions along the Silk Road between the 13<sup>th</sup> and 14<sup>th</sup> Centuries. (annexe 4).

This perspective would have the virtue of rendering intelligible the paradox of debit-credit positioning both for the Occidentals and the Turks.

Finally, we are right to ask whether an evolved accountancy can be born or developed, without rubbing shoulders with the reality of commercial exchanges in time and space.

A tool hones and refines itself in its very use.

For the Occident, the Middle Ages were a commercial slump; exchanges were paralyzed. Yet during the same period, the Orient was in full expansion.

As a corollary, conquests gave birth to the necessity of managing immense territories with a state accountancy that responded to commercial flux with commercial accounting.

Necessity is the mother of invention, and accounting in the Orient responded to new needs, such as the development of credit.

How then do we ignore Albert Dupont’s hypothesis ? : “We know what a remarkable contribution the relations established between European countries and the Muslim world were to Western sciences during the Middle Ages, a time when Western sciences were still in their infancy. It is to those relations that mathematical sciences owe Arabic figures and position numbers. Why would it not also be from this source that the tradition of double-entry

technique came, in this embryonic state which has supposedly come to us from antiquity? What seems quite certain is that Italy was the country to welcome this tradition.” (1925)

The history of Oriental accounting is only just now becoming the subject of research.

Thus a tremendous field of study is opening up, and as Ahmed Djebbar wrote (2005): “The history of the circulation of algebra from the Arab-Muslim world to the European world, even in its broadest lines, has not yet been written.”

How much less the history of accounting!

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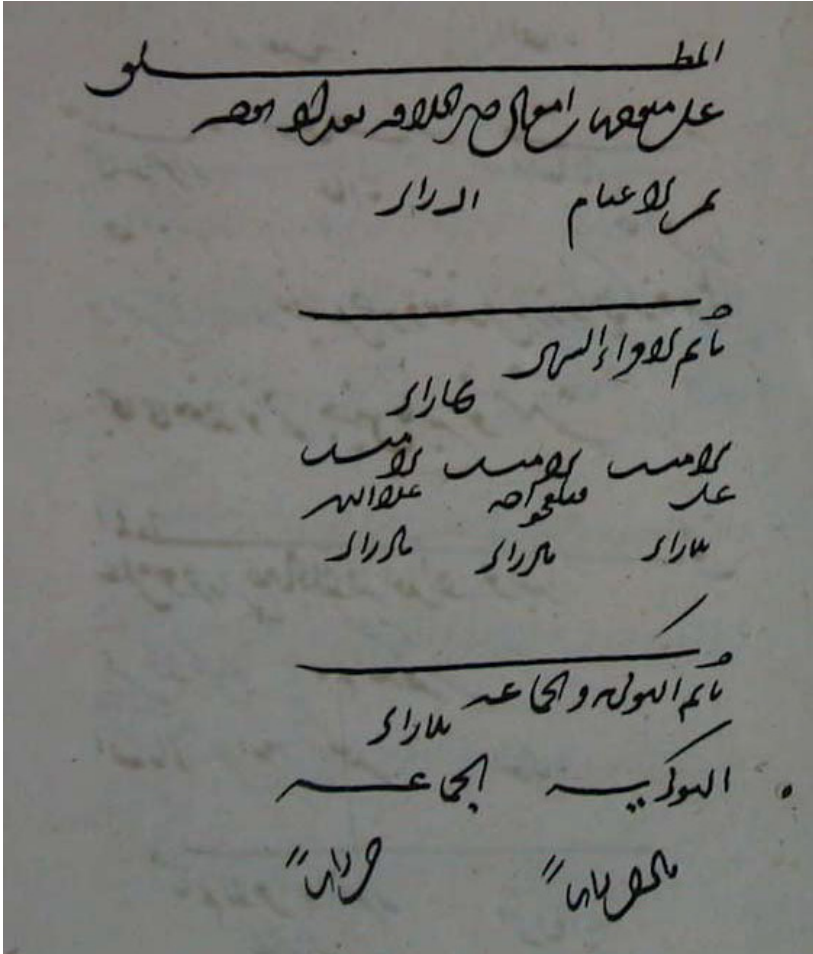
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Annex 1

Ilkhanian Accounting Record Sample - 1





### Annex 3

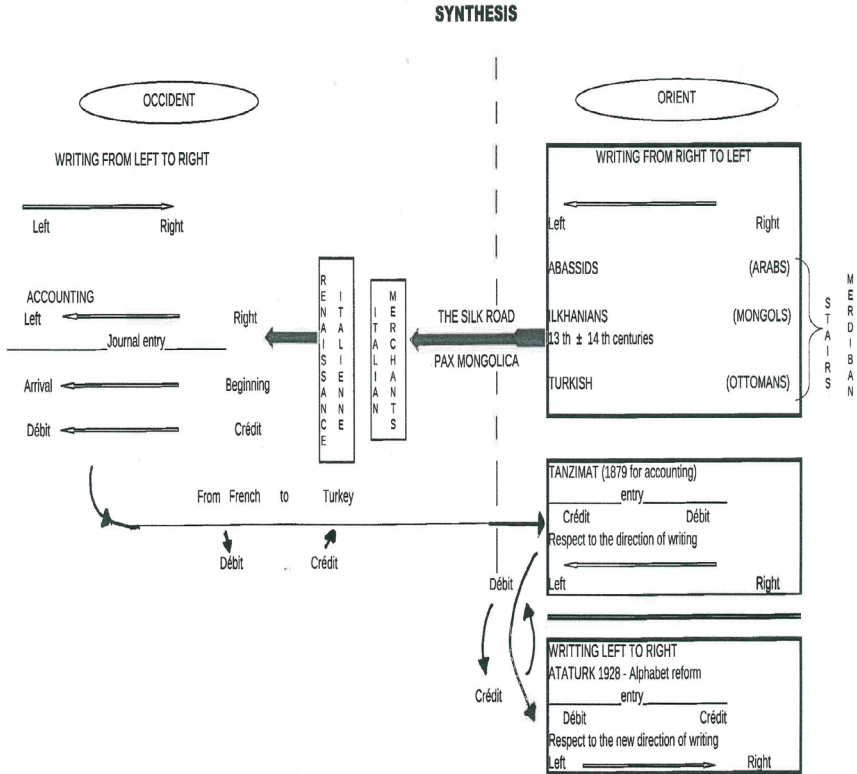
#### CODE ON THE ADOPTION AND IMPLEMENTATION OF THE TURKISH ALPHABET (Date: November 1, 1928, Number: 1353)

With the passing of this law, the Turkish Alphabet converted to the use of Latin letters. As is known, the double-entry method was developed in accordance with the convention of writing from left to right. The Turkish Alphabet, before Latin letters were adopted, was written from right to left with Arabic letters; as such, there were difficulties with application of the double-entry method in Turkey.

It is observed that after the adoption of the Latin letters, there was a fundamental development and extension of double-entry method not only in educational literature, but also in accounting applications.

With the Arabic letters being written from right to left, some disagreement emerged as to whether the columns should be written on the right side or the left side in the recording of items in daily books. By the same token, occasionally assets might be written on the right side or on the left side in the balance sheets. And all these things made the settlement use of the double-entry method, which began to be applied recently, quite difficult.

# Annex 4



**Annex 5**

**Secretariat of the Director of Finance**

