

The victory of the Prussian railway dynamic accounting over the public finance and patrimonial accounting models (1838-1884): an early illustration of the appearance of the second stage of capitalist financial accounting and a testimony against the agency theory and the market for excuses ideologies

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Abstract

- . It has been suggested, on the basis on the French experience, that after the beginning of the industrial revolution (at the end of the 18th and beginning of the 19th centuries) the capitalist models of regulated financial accounting went through three main stages of development : the "static", the "dynamic" and the "actuarial" stages.
- . The history of accounting for private railway companies in Germany shows that these companies played a major role in the diffusion of historical cost accounting principles and provided (with big other joint stock companies) to the birth of the "dynamic" or second stage of capitalist accounting , at least in continental Europe.
- . If the representatives of such railway companies did not develop new concepts of accounting, notably with depreciation, by 1875-1879,they had elaborated a new theory of accounting (historical cost or dynamic theory).This theory had a profound impact at least on German theorists of the late 19th century and early 20th centuries such as Simon, Rieger and Schmalenbach.
- . The new theory was needed to justify a new law favouring shareholders in a hurry for returns on their investments rather than company creditors. It also defeated the ideology of public finance and patrimonial (or static) theories of accounting.
- . This theory appeared before (**rather than after**) the law which promulgated the new approach and clearly defended the private interests of shareholders (rather than those of the public in the strict sense). It appears to contradict the Watts and Zimmermann's basic hypothesis of the "theory of market excuses" ..
- . Agency theory does not appear to apply either, as the new theory was proposed by managers allied to shareholders (and especially "hurried shareholders) against creditors ;a "theory of alliance" appears to be more consistent with these developments.
- . The main reasons for developing the new accounting theory were connected with the issue of **dividends**, more specifically with :
 - the necessity to find an accounting approach which would allow the distribution of dividends at the very beginning of an investment cycle, even before any revenue was being earned;
 - the desire to find an accounting approach which would also ensure that profits were distributed as evenly as possible through out the whole investment cycle and among the different shareholders who financed the investment.

Hence, the second stage of development of capitalist accounting was not connected with measure of performance or information problems (monitoring and bonding) but seems to have been caused by the need to regulate profits and dividends in the interests of managers and shareholders. However, as this change took place within the framework of prudence, it was not possible at that stage of capitalist accounting to achieve a perfect

smoothing of the rate of accounting profit : the solution to this problem was only to be found at the end of the XXth century with the onset of the third or actuarial stage and the "discovery" of fair value .

Introduction

Accounting for railway companies is considered to have played a major role in the evolution of accounting thought and practice.

This role was increased, at least from a theoretical point of view, as leaders of the positivist school referred to Anglo-Saxon accounting literature concerning railways demonstrate that accounting theories are normative being used as excuses for political action (Watts and Zimmerman, 1979, pp. 273 and 290).

In America and England the history of railway accounting is relatively well known thanks to a wide range of references written over the last seventy five years, notably Mason (1933), Littleton (1933), May (1936), Pollins (1956), Brief (1966, 1967), Kitchen (1974), Boockholdt (1978), Glynn (1984), Edwards (1985, 1986, 1989), and Bryer (1991).

By contrast, recent literature on the history of accounting for German railway companies is sparse and does not deal with the subject specifically (Oberbrinckmann 1990, Schneider 1987); there is also some older literature but it is rarely referred to it because it is written in German (Reden 1843, Passow 1919, Barth 1953 and Mieles 1932).

However, this history deserves to be brought to light and made accessible to a larger public in the context of the modern debate about the political and social roles of accounting. It is our intention to fulfil this double task of exhumation and reinterpretation of the history of German railway accounting. We focus here on the history of Prussian private railway companies which played such a major role in the development of the Germany's railway system. Our period of study starts in 1838, coinciding with the passing of the first law on accounting for railways, it ends in 1884 with the passing of the joint stock law: this was a very important law which marks a key turning point in the history of German accounting, under the influence of railways managers and their shareholders. Our objective is mainly to respond to the following questions which almost all been raised by the Anglo- American literature :

- What is the role played by railway accounting in the diffusion of new accounting techniques and more broadly in the evolution of accounting systems ?
- What were the reasons for the possible appearance of a specific style of accounting for railways ?
- Did the development of the Prussian approach to railway accounting influence the developments on any specific accounting theory ?
- Does the thesis developed by Watts and Zimmerman according to which "accounting theory satisfies the demand for excuses" apply in the German (Prussian) case ?

- As an alternative does agency theory fit these circumstances ?

The first part of our paper provides the historical background and the sequence of acts regulating railway accounting from 1832 to 1884 :

- the early regulation of 1838-39;
- the attitude of railway companies to the law of 1838;
- the 1843 law;
- evolution from 1843 to 1861;
- the commercial laws of 1861 and 1870;
- the victory of railroad managers and shareholders and the law of 1884.

The second part of the paper is devoted to responding to the following questions :

- the nature of the change inferred by Prussian railroad accounting;
- the reasons of the change;
- the existence (or not) of a theory;
- the contribution of Prussian railway accounting to the development of financial accounting law;
- the validity of the "market for excuses" hypothesis and the "agency theory" as applied to the German (Prussian) case.

The historical background

In Prussia at the end of the 1820s and the beginning of the 1830s the very first railway lines were constructed and managed by private companies¹. This situation lasted until the end of the 1840s when the State began either to buy (and manage) some companies, such as the Ostbahn and the Saarbrückereisenbahn, or to take over the management of some private companies, such as the Aachen-Düsseldorfer and the Bergisch-Märkischen railway companies (Mieles, 1932, p. 37). However, by 1862, the role of the State was not yet dominant as it is shown by the following summary (after Steitz 1974, p. 90 quoting Kech's Eisenbahnpolitik) :

| |
|--|
| fully owned and managed by the State : 1562 km |
| privately owned but managed by the State : 1355 km |
| fully owned and managed by private companies : 3050 km |

It was only during the nineties that the State, in the context of economic crisis, took the lead through substantial purchases of private railway companies.

This progressive growth of government control culminated in the complete nationalisation of the last remaining private railways companies. In this study, which ends with the joint stock law of 1884, we are only dealing with privately owned railway companies.

Through-out this period, but especially during the **thirties** and the **forties** the main problem with German private rail companies had been a problem of financing. The private companies had hoped that the government would finance their operations with state-bonds² but until 1842 this was difficult because of the law of 17/1/1820 (Staats-schulden edikt) obliging the Prussian authorities to ask for a special authorisation from the Parliament (Stietz p. 170). So, realistically, until the forties, private rail companies were obliged to depend on private capital. The challenge was not so much lack of capital but the problem of profits; Hansemann, a proprietor of textile and insurance companies of Aachen, and one of the founders of the Köln-Mindener(Cologne-Minder) railway company stressed, the crucial thing was not the capital but the "hope for profits" (Hansemann 1837 p. 30). For most potential capitalists, at least, the expectation of profits was for rapid profits if not an immediate return on their investment (in that sense Steitz 1974, pp. 31 and 52).

This demand for immediate and "guaranteed" profits not only clashed with the risk taking approach of "true capitalists" but was also in total conflict with the nature of investments in rail companies: these require long period of construction and also some difficulties to get, after the start, an effective management. As the German history of railways shows, as soon as the hope for rapid profits vanished, many capitalists renounced to go on financing the capital already subscribed³ and sometimes preferred to demand the dissolution of the company. Among the main well known illustrations of this kind of situation are the case of the Leipzig-Dresdener Eisenbahn whose Magdeburg's shareholders led in 1839 a campaign in the newspapers to ask for a general assembly in order to decide the dissolution of the company and especially the case of the Rhein-Weserbahngesellschaft which was compelled to dissolution in 1843 by its frightened shareholders (Steitz pp 185 and 196).

The German capitalists founders of the first big railway companies such as Camphausen, the President of the Handelsammer (Chamber of Commerce) of Cologne, and Hansemann (already quoted) were perfectly aware that they could hardly have succeeded in their projects without the help of the State and the administration of big towns such as Cologne and Münster. They proposed, with different modes, an alliance of the private capital with the Junker-state administration. Camphausen who had leaded the defunct project of the Rhein-weser company, thought that the private companies could build the

tracks but with the help and the control (Regalwalt) of the State and that this latter, after a certain time, could take the administration (Steitz 1974, pp. 54-55).

Hansemann, the founder of the Cologne-Minden Company, was inclined to think that the private capital could build (with the help of State-loans) only the most profitable lines and let to the State the burden of the construction of the other ones (Steitz 1874, p.56).

Whatever could be their different philosophies, these captains of industries agreed on the following points : the success of their undertakings could not be achieved without

- the distribution of fixed interests (Zinsen) at a minimum of 3,5% to shareholders not only after the beginning of the operation but also during the period of construction (Bauzinsen);
- the guarantee of the State that these interests could be paid independently of the result of the company (in exchange of various modalities which could give to the State the possibility to become a proprietor - at long term -).

These modalities were also sustained by economists notably by List who published in 1832, after his come-back from the United States, a leading article in favour of the association of the State and the private capital. (Steitz 1974 p. 51, quoting Meyer 1918).

As Steitz showed, the negotiations with the State were very hard notably concerning the financing through public loans. It is interesting to give an example of their results in the case of the Cologne-Minden Company, one of the biggest projects in the forties. After a long bargaining with the State it was agreed in 1843 that (according to Steitz 1974, pp. 265-266) :

- the company is founded with a share capital (Fonds im Aktien Kapital) of 13 000 000 Taler;
- the Prussian State takes 1/7 of Share capital; it means 1 860 000 Taler;
- the rest of the share capital must be found on the free capital market (under the condition of an initial payment of 10%);
- all shares will receive an annual interest of 4% during the period of construction (Bauzinsen);
- if there is a need for a supplement of fixed assets this excess will be financed either by additional share capital (with a participation of the state by 1/4) or by loan with the authorization of the board of administration and the ministry of finance;
- after the opening of the operations the net income (Ertrag) will be calculated by deducting the interests for bonds, the management, administration and reparation (Unterhaltung) costs (Kosten) and a sum for supplying a special Reserve funds⁴;

- this net income will be distributed first as a 3,5% guaranteed interest for shares and the rest as dividends;
- if this net income is to exceed 5% of the capital, the surplus will be shared on behalf of 1/3 for the State et 2/3 for private shareholders;
- the surplus paid to the State could be used by the latter to pay guaranteed interests (in case of difficulties of the enterprise) or to amortize (at nominal value) 6/7 of the capital subscribed by privates owners⁵;
- the State is obliged to proceed to this amortization if the return on the share capital is below 3,5% when the guarantee of the State is required : in that case the State may use the interests received on its share of capital and the interests corresponding to the construction.

Beyond these financial data, it is interesting to mention some clauses relative to the administration of the company; the statutes provided for the following prerogatives of the State (according to Steitz 1974, p. 266) :

- the decisions about tariffs, the nomination of the head of the board of administration, the main technical directors and the chief accountant (Hauptkassierer) require the authorization of the Ministry of finance;
- the State has the right to nominate a member of the Direction, who is not obligatorily a shareholder but detains the right to vote;
- a royal superintendent (Kommissar) takes part to the general assembly with a minimum of 1/7 of the voting power (at the beginning with a progressive rise of this proportion to 1/4 and even 1/3 after 35 years).

These clauses were written in 1843 after the publication of the law of 1838 governing the railway companies but all the ideas expressed in the Cologne-Minden statute and the law of 1838 (see below) had already been expressed as early as 1832 by List and also by Camphausen during the long negotiation that led from 1837 to 1838 to the failure of the Rhein-Weser project (Steitz 1974, pp. 182-201).

The main lesson to be taken from these texts for our purpose is that there was an interaction of **different types of influences** at the head of the private railway companies : influence of capitalist owner-managers submitted to the pressure of small and "hurried" shareholders and influence of representatives of the State or of regional administrations. This diversity of influence, of course, was a critical point for the development of accounting as it has already been stressed at the heroic time of the first railways by Von Reden, the director of the Berlin-Station railway (1843, p. 300), and also later by Mieles, whose declarations are worth while to be quoted : "usually, the accounting system of German railway companies has been both influenced by the merchant and the public

finance way of thinking. At the beginning of the railway period in Germany merchants and public treasury people met together. The Treasury accountant⁶ (Kameralist) had to recognize the merchant objectives ... and be used to the essence of merchant vision, the desire of profit; on the contrary the merchant had to adapt himself to the representation of the public finance accountants : this explains why a special form of accounting arose" (Mieles, 1932 p. 29).

We are now going to analyse what was, for early Prussian railways, this "special form of accounting" and which rules applied to it.

The early regulation of 1838-39 and the birth of the Prussian railroad accounting

The first clear and general representation of the initial Prussian accounting system for railways companies is given by a law published in 1838 and a commentary made in 1839 by the Prussian administration.

** The law of 1838*

The First law of railways (Eisenbahngesetz) was promulgated on the 3/11/1838 at a time when there was in Prussia no strict regulation concerning the Joint stock companies; the main articles concerning accounting are the following ones :

Article 29 : The company has to determine its receipts (Bahngeld) in such a way so as to :

- cover "the costs (Kosten) of maintaining and managing of the way" ...;
- take account "of a statutory contribution for collecting a reserve fund (Reserve funds) for extraordinary outlays (Ausgaben) concerning the way and the accessories";
- "cover other expenses (Lasten) such as the taxes provided at the Article 38" ...;
- benefit from a net surplus (Reinertrag) including both interests and profit (Gewin) corresponding to an amount not exceeding 10% of the capital invested (Anlagekapital) and not less than 6% of this capital";

Article 33 : "If after deduction of all expenditure (Ausgaben), including the annual amount provided for supplying the reserve fund, the net surplus exceeds 10% of the invested capital, the administration is entitled to demand a reduction of the transportation prices;

Article 34 : "For the sake of the execution of the articles 29-33 the company is obliged to take a precise accounting (Rechnung) on all parts of its undertaking (Unternehmung) and to follow on that purpose the indications given by the Ministry of Commerce. The results of this accounting are to be transmitted every year to the administration".

Article 38 : "The railway company must pay a tax (Abgabe) which is based on its surplus after deduction of all management and maintaining costs so as the amount directed to the contribution to the reserve fund".

Five main conclusions can be drawn from these articles :

- the first one is that there is no obligation to make a patrimonial balance sheet describing the assets and the liabilities contrary to the uses and the laws concerning the merchant people. This point has already been stressed by the German literature of the late 19th (Schüler, 1879, p. 65) and the early 20th centuries (Passow, 1919, p. 241);
- the second one is that the law asks the companies to draw up a cash flow account describing the cash receipts (Bahngeld) and the cash payments (Ausgaben). Of course at that time there is a lack of precision about the terminology (sometimes expenditure is replaced by cost) but the text clearly implies a cash flow accounting system; this was also Schüler's (1879, p. 65) and Passow's (1919, p. 237) opinions;
- the third one is that the law foresees the possibility (**but not the obligation**) to deduct from the revenue a yearly amount for a future extraordinary outlays. This amount, in our opinion, is clearly an element of expense and not a call on the net income⁷. The whole system seems to be devoted to distribute regularly the extraordinary outlays over the periods; **if it is used** it is then a substantial modification of the traditional cash flow accounting system and an important step toward an accrual accounting system;
- the fourth one is that the whole accounting system is devoted to three main tasks :
 - . the evaluation of the profitability of the companies (that must not trespass the upper limit of 10% of the invested capital);
 - . the calculation of the mass of distributable dividends;
 - . the determination of the basis of taxation;
- the fifth one is that according to this law (§ 29) the concept of profit (Gewinn) is **after deduction** of an interest (Zins) paid to the shareholder as a normal and automatic remuneration of their capital independently of any profit; Keyssner has shown (1875, p. 100) that this stipulation was the legalization of a former practice: he quotes examples of statutes (accepted before the publication of the law) containing this conception of profit such as those of the Berlin-Postdamer Eisenbahngesellschaft (1837) and of the Dusseldorf-Elberfeldergesellschaft (1837). As this lawyer noted (1875, p. 128) this conception was contradictory to the view of traditional jurists as inherited from the roman tradition notably of Anschütz and Von Völderndorff so as of Puchelt; it was in our view promoted by managers and economists (Keyssner mentions the influence of the economic science (1875, p. 127)) to reassure shareholders that their share capital was as safe as that of creditors' investments.

In summary, to achieve these objectives, the first Prussian law on railways companies :

- eliminated the traditional balance sheet of the merchants;
- took the model of cash flow accounting as the basis (principle) of determination of profits;
- but provided for a modification of this model to resolve the problem of extraordinary expenditures.

These elements are already important to seize the nature of the initial railway accounting system; however they are not totally clear : what was notably this cash flow accounting system ? Fortunately the Prussian administration gave a response to the question soon afterwards the publication of the law.

* **The Prussian instruction of January 1839**⁸

As stressed by Mieles (1932, p. 10) the main points of the explanations furnished by the Prussian Minister of finance deal with distinctions between different cash out-flows.

Before presenting the solution of the Minister it must be said with Mieles (1932, p. 48) that normally speaking, in the frame of a pure (true ?) cameralistic (cash flow accounting) system, **all the expenditures** (with exception of the repayment of share capital⁹) must be treated as diminutions of the profit of the year.

But the Ministry, in line with legislations or practices already widely adopted abroad, decided that one must distinguish :

- expenditures that do not influence the result of the year (erfolgsunwirksame Ausgaben) such as expenditures for the construction and also expenditures for modernising the track (as far as they are admitted by the government and financed by shares);
- expenditures that influence the result of the year (erfolgswirksame Ausgaben) such as :
 - . expenditures for the acquisition of the inventories (Betriebsinventorium);
 - . expenditure for maintaining the track;
 - . expenditures for transport;
 - . expenditures for administration;

The reason for this "anomaly" in the frame of a cash flow based system is obvious : it was "impossible" to treat the early and costly expenditures for the construction of the tracks as an element of the result of the year for it would have caused losses and prevent the

shareholders to receive any profit for a long period of time (if the distribution of dividends were based on the accounting figures).

The only possible solution to this problem was to agree that expenditure for construction are not an element of result : this was the first but decisive infringement to the pure cash flow accounting. This is the reason why Miele was right to affirm that it was not a strict Cameral (cash flow) accounting but a "special form" of Cameral accounting" (1832, p. 49).

The attitude of the railway companies towards the law of 1838

As we are going to see afterwards some German accounting laws have raised big protests; this was not apparently the case with the law of 1838 : we have not found in the German literature any trace of attack against this law.

Even before the promulgation of the law, it seems that the choice of the private companies was in favour of a similar type of accounting. Schüler (1879, p. 65) says that in the statutes of the older railway companies the result was obtained only "on the basis of the relationship between cash receipts and expenditures". Passow (1919, p. 247) quotes the case of the Rhine-Company which, in 1837, has a statute presenting a clause of a reserve fund. Miele¹⁰ (1932, p. 10) deems that the law of 1838 was a "recognition" of practices that existed before. After the promulgation of the law, from 1838 to 1843, the companies seem to respect the schedule fixed by the comparison of receipts and expenditures.

According to Passow (1919, p. 247) **most statutes** provide for a reserve fund but there are differences as to the treatment of this fund :

- the majority of the companies make the drawing for the fund after distribution of a minimal dividend¹¹;
- some companies make the drawing by passing expenses before the calculation of the profit¹²
- Although there is formally a big difference between the two kinds of formation of the reserve fund, Passow (1919, p. 249) notes that, as a matter of fact, both systems aim at providing for the **renewal** of the fixed assets.

The law of 1843 and the manoeuvres of the German railway administration

With the law of 9/11/1843 on the Joint Stock Companies (Über die Actiengesellschaften) the Prussian Government, for the first time, provides for a specific¹³ regulation of the Joint Stock companies; the paragraph 24 of this law states that the board of directors must keep

such accounting books as to give "a view of the patrimonial situation" (Übersicht der Vermögenslage) and in the first three months of every commercial year must draw up a balance of the wealth (Vermögen) of the company. Moreover, the paragraph 17 mentions the principle of the fixity of capital.

According to one of the best specialist of commercial law of the 19th century a strict lecture of this law could have rendered impossible for railway companies the production of mere "management balances", it means results based on cash flows, and have required to take account of the values of assets and liabilities (Von Strombeck, 1882, p. 467). But, fortunately for the state administration and the managers responsible for railways, this law was very imprecise : they were no information concerning the valuation of assets and liabilities and no determination whether the balance sheet would be the basis for the distribution of dividends .This fact is stressed by Schüler (1879, p. 66). With such a margin of flexibility it was possible for the administration and the managers of railway companies to ignore the law and to go on using the principles laid by the law of 1838.

As Passow shows (1919, p. 232) the Prussian administration went on accepting statutes where profits were only based on the comparison of receipts and expenditures : this was notably the case of the statutes of Bergish-Markish (1844) and the Berlin-Hamburger railway Joint Stock companies.¹⁴

A little later this resistance of the German railway commercial administration was fostered by the decisions of the tax administration; on the 30 May 1853 a tax law on railways (Eisenbahnsteuergesetz) stipulated in its article 2 that "the net profit (Reinertrag) of the railway firms is considered as the distributable amount ... after deduction of administration, maintenance and management costs, so as the necessary contribution to the reserve fund and the amounts for the planned retribution and repayments of the borrowings...". This definition of profit was totally in line with the kind of cash flow accounting advocated by the Minister of Commerce; as Schüler (1879, p. 66) stresses this law also disregarded the patrimonial balance sheet.

After this date the Ministry of Commerce continued its "play" with the commercial law of 1843 : in 1856 this Ministry published a list of recommendations to be followed so that the statutes of the railway companies could be admitted (Passow 1919, p. 239). This time the administration acknowledged that the net profit (Reingewinn) must be based on the registration of the movements of the balance sheet and not on the calculation of the difference between the receipts and the expenditures (Passow 1919, p. 239)¹⁵; but this conclusion remained purely formal; Passow (1919, p. 239) shows, on the basis of some

published statutes, that the Ministry "went on to accept statutes in contradiction" with the law of 1843.

The evolution of the situation was however notable on a single point : the case of "interests" on shares. Under the pressure of the lawyers it was decided that there could no longer be any interest to be distributed to the shareholders after the construction of the railway but only dividends. However the practice of interests could be allowed **during the period of construction** under the condition that the company determine the period of construction and the rate of the interest (article § 17 of the law) : this concession was obviously obtained for the satisfaction of "hurried shareholders" despite the opposition of strict-minded lawyers. Keyssner notes (1975, p. 209) that this new regulation constrained the railway companies, notably the Cologne-Minden Company, to modify their statutes.

The late evolution from 1843 to 1861 : towards a kind of "dynamic" accounting

In 1838, as we have seen, the supremacy of the cash flow accounting had been admitted for the calculation of the profit for railway companies; the registration of a yearly **expense** for anticipating extraordinary expenses was only a **possibility** opened to the interested companies. This situation changed at the end of the fifties.

In 1857 the Ministry of commerce launched an inquiry about the question of the "funds" of the railway companies¹⁶.

It was apparently intended to clarify the terminology, the structure and the goal of these funds and to discuss with the directors about the possibility of a move towards a more systematic of their use.

The first result of this enquiry was to distinguish two kinds of funds : the reserve funds (Reservefonds) and renewal funds (Erneuerungs fonds).

The role of the "Reservefonds" was said to cope with extraordinary and non customary expenditures such as flooding, accidents.

The role of renewal funds was restricted to cope with the problem of expenditures for renewals so as "**to permit, as much as possible, the equilibrium (Gleichmassigkeit) in the "loading" (Belastung) of the proprietors of shares at any time**" (text quoted by Passow 1919, p. 252, underlined by the author). This is clearly an instrument to get regular dividends.

As Passow says (1919, p. 251) these propositions "**seem to satisfy the directions of the railway companies**".

This could explain that only a year after a circular of 27/1/1958 issued by the Ministry of finance :

- regrets that a renewal fund is not provided for in all statutes;
- asserts that the reserves funds are not sufficient to take account of the regular wear and tear of the fixed assets and that it is not possible to speak of a distributable profit without an allocation to a renewal fund so as to assure the sustainability (Nachhaltigkeit) of the dividends;
- demands that the railways' directions measure the importance of the yearly do allocations to the reserve and the renewal funds in conformity with the views of the inquiry;
- demands that these directions prove the respect of the disposition of this circular to get the agreement of the Ministry for the determination and the payment of dividends.

At the difference of the law of 1843 this text had an immediate practical echo; according to Passow (1919, p. 252) just after the promulgation of the circular the new statutes¹⁷ regularly provided for a renewal fund.

Apparently, in Prussia, at the end of the fifties, the situation for railway companies seemed to be clear : **the initial cash flow accounting has been transformed in a kind of accrual accounting devoted to the "regulation" of dividends** it means, according to the Schmalenbach's famous qualification, a kind of "dynamic" accounting (Richard, 1998, p. 576). But it was without taking account of the "misfits" of the commercial law.

The commercial laws of 1861 and 1870 and the unavoidable confrontation between commercial and railway accounting

At the beginning of the sixties the lawyers from different states were called up to lay the foundations of the first Commercial Code for the whole of Germany. As a result the law of 24/6/1861¹⁸ obliged all merchants (Kaufleute) to follow the rules of the General German Commercial Code; the aim of this Code, in line with the French Commercial Code of 1807, was to protect the interest of creditors by drawing up a balance sheet which permits to compare the **market value** of assets with the bulk of debts in the hope that the difference between this two amounts could be the maximum so as to avoid any problem of payment of debt in the case of a failure. This type of accounting which received the name of "static" accounting (Richard, 2005 b) was mainly expressed in the article 29, 30 et 31 of the Code.

This type of legislation was clearly reinforcing the argumentation of those who, on the basis of the Prussian law of 1843, ascertained that the railway companies had to make a patrimonial balance sheet. However, the defenders of the "special" railway balance sheets could have pleaded the fact that railway companies were not merchant people or companies. But this last hope was also lost with the second step of the commercial legislation : the law of 11/6/1870. The articles 5 and 208 of this law extended the rules concerning merchants and commercial companies to every kind of Joint stock (public) company, including railway companies.

As it was stressed by Schüler (1879, p. 66) the presentation of this law (Motiven) clearly expressed that "the making of purely operating (Ertrags) balances and the distribution of purely annual surpluses (blossen Jahresüberschüssen) is inadmissible". Following the article 217 "it can only be distributed among the shareholders what profit is left according to the **annual balance sheet** [it means the patrimonial balance sheet], after an eventual deduction for creating a reserve fund if it is provided for by the statute".

So, at that time, the situation was clear : the German railway companies had either to respect the law or to fight to change the law. They chose the second way because it was, as we are going to see, "impossible" to accept the traditional commercial rules^{19 20}

The fight of the railroads against the static laws of 1861 and 1870

This battle lasted about ten years from 1873 to 1883 and mobilized as well as practitioners as theoreticians along five main stages corresponding to various declarations and articles.

* **The first attack** was launched, as it is not surprising, by the main fighters, the managers of railway companies. In 1873 a special commission was nominated by the Prussian government to study the problems connected with the railway concessions (Spezial Kommission zur Untersuchung des Eisenbahn-Konzessionwesens); among the participants was Scheele, the president of the Reichseisenbahn, who declared that "a part of the stipulations of the law of 11 June 1870, especially those concerning the balance sheet, the calculation of dividends and the bankruptcy are not suitable for railway companies"; he added, that the value of assets" should not be obtained on the basis of their separate components, but according to the **value in use** (Nutzen), it means the profitability (Ertrag) derived from their **global** entity" and that this was "important for the payment of dividends, the determination of balance sheet and the problems of insolvency". He also stressed, in order to justify these assertions, that, for railway companies, "it can be considered that the assumption of a **going concern** (vermuthete

Fortbestand des Unternehmens) is integrated in the law" and concluded that "the fixed assets... must be considered as **stable items** (stabile Posten) without any impact of future reductions of value" (Declarations taken from appendix of the report by the special Commission published in stenographic report of the debate of the House of deputies, first session of the 12th legislature period 1873-74, third volume, pp. 1638 and followings with some words emphasized by the author).

To end with the subject of this special commission, it is worth while noting that to a question concerning the desirability to maintain the existence of interest for shares during the period of construction the asked expert mandated by the railway companies answered that the consent of interests was "obvious" and that these interests "are a part of the fixed assets" (Faucher , 1873, p. 41). The last part of the answer testifies that for this expert (as well as the majority of companies) the accumulation in the assets' side of interests paid to shareholders during the period of construction was not creating a fictitious asset contrary to the opinion of many lawyers (see below).

These ideas were apparently largely shared by the directors of railway companies²¹

* **The second attack** emanated from the judicial side. Two years after the commission one of the leading commercial lawyers of Germany published a long article and reiterated after Scheele that "the distribution of dividends is not to be connected with [patrimonial] balances but only with annual calculation of operating profits [Jahresbetriebsberechnungen]" (Keyssner, 1875, p. 135) and that anything else is "impossible" especially "the determination of the value of the expensive assets as taken one by one in independence of each others" (ibid; p. 133). He also added that if a kind of value is to be considered for the balance sheet "it must be a value derived from the profits (Ertrag) taking account of the probable duration of the firm" (ibid, p. 142) and that as a practical means "the costs form the starting point" (ibid, p. 133).

In spite of these basic similarities it seems that Keyssner provided for two new elements in the battle against the old accounting system. First, he emitted the idea that the comparison of assets (at value) with debts and the maintaining of a minimum of capital are not obligatorily the best means to protect the creditors : "the joint stock company could have lost the half of its capital and nevertheless offered to the creditors an entire security; the enterprise can be alive if it is capable to get a revenue" (ibid, p; 143). This was practically a new conception for the time according to which the protection of creditors is obtained so long as the current revenues cover the current expenses. Thanks so that position it "could be possible to distribute dividends to the shareholders even if the whole of the capital is not covered by assets" (ibid p. 143). Second, he enlarged the scope of the reforms in

proposing that for all joint stock **companies** (not only railway companies) "the obligatory patrimonial (one that calculates the liquidation value to the owner of the business) balance sheet could disappear" and be replaced, for the sake of distribution of dividends, by another type of balance sheet allowing for "an equal division of profits" (ibid, p. 144).

* **The third and nevralgic element** of the new course was an article published in 1878 by another lawyer, J. von Strombeck (from Magdeburg) whose ideas also played a significant role in the course of the battle.

Von Strombeck, as well as all the preceding actors, admitted that the problem of distribution of dividends for joint Stock and especially railway companies is a crucial one and that it is very important to find some means to cope with the problem of "the necessary weak returns in the first year of operation" and to "avoid any influence of fluctuation of prices on the stable assets" (1878, I, p. 17).

He also, as did Keyssner, asserted that from the part of creditors "the agreement of credits should be not based on the importance of the capital in its relationship to the wealth (patrimonium)but on the profitability of the fixed assets" and that the traditional legal position is not a convenient one (1878 I, pp. 3 and 23).

This two first elements allowed him to declare, in line with his predecessors, that the legal ("static") balance sheet based on market values was not convenient for shareholders (for the distribution of dividends) and even for creditors, especially in the case of railway companies (1878 I, p. 3).

The originality of Von Strombeck seems to rely in the fact that he proposed **a reasoning** for a systematic construction of various types of balance sheets. According to him the content and the valuation of the various assets of companies depend on the "aim" (Gegenstand or Zweck) of this company or of this balance sheet²² (1878 I, p. 4 and 1878 I, p. 94-95). Thanks to this basic principle he distinguished three fundamental categories of fixed assets for joint stock company (1878, I, p. 4).

The first class comprises assets devoted to the "**use in a permanent propriety**" (1878 I, p. 4); for this kind of assets (companies using this type of assets) the rest of the article shows that there is no question to make valuations based on the market values and that the assets appear as stabile assets (stabile Grundvermögen) with a valuation at cost; for most of this kind of assets their usage creates a depreciation (Entwerthung aus Abnützung) which must be, as in the case of railroads, compensated by a reparation (Instandhaltung) thanks to a deduction out of revenue so that the assets could be stable (1878 I, pp. 5-6).

The second class comprises assets intended to be sold (1878 I, p; 6) and form the variable fixed assets; these assets, as it is shown by numerous examples all along the article, are valued at their exit value (Veraüßerungswerth).

The third class is specifically devoted to the assets of insurance companies (1878 I, p. 7). According to him this kind of company must treat its assets according to the principles laid for the second class (1878 I, p. 33).

According to these rules the fixed assets of railway companies and many joint stock companies could be valued at cost which is satisfactory to avoid the fluctuation of prices and their incidence on the distribution of dividends (1878 II, p. 76) Von Strombeck, at the difference of other specialists, was conscious that this type of balance sheet was contradictory to the law and proposed to change it not only for railway companies but also for all joint stock companies (1878 II, p. 106). At least for railway companies he thought that these questions and especially the question of the basis for distribution of dividends were of public interest (1878 II, p. 84).

The fourth attack against the static law was launched in 1879²³ by Hermann Scheffler a railway director of the Braunschwig Company. Scheffler was very conscious that the whole affair about the discussion of various balance sheets was fundamentally a **social conflict** opposing the "creditors" that want what he called an "objective value" (objektiver Werth), it means the market value, and the "proprietors" (in our view the shareholders for railway company) who want the cost value (1879, p. 34). He was conscious that there was a competition of many possible principles of accounting (1879, p. 20). He also thought that the construction of a balance sheet depends of the aim for which the assets are detained but he added that this aim was connected with an **analysis of the purposes of the various stakeholders**.

According to him the value of an asset for which only a proprietor is interested (such as a machinery) is the subjective value for this proprietor, it means, **practically**, the cost (1879, p. 23). On the contrary, for objects in which other persons than proprietors are interested, that is for objects which are to be sold, the value is the "objective value", it means basically the exit (market) value (1879, p. 24)²⁴.

Interestingly Scheffler was a strict defender of the theory of cost value for "objective" elements : he made clear that "no circumstantial event, no variation of price, no variation of profitability and other external time related conditions can change the cost value of assets for use : only the lost due to the usage must be taken in account and notably with

the formation of systematic annual depreciation (1879, pp. 26-27). Even material inventories such as inventories of rails are not to be impaired (1879, p. 40).

More surprisingly, at least for the traditional lawyers but also even for the railway managers of the time, Scheffler thought that every intangible long term investment must be treated as a fixed asset to be depreciated, even foundation costs and education costs (1879, p. 39) : he was a pure defender of what has been called afterwards, at the time of Schmalenbach, the dynamic school !

All these ideas were connected with the problem of regulation of profits; Scheffler notably said that the cameral (cash) accounting is "not rational because it can cause a considerable fluctuation of profit" (1879, p. 14). If he does not explicitly mention the case of the static patrimonial accounting it is obvious that the whole of his work was destined to abolish this type of accounting.

It is worth while noting that according to Scheffler the demolition of this type of accounting is not necessary connected with the replacement of the law : he thought that the articles 29 and 31 of the law of 1870 were sufficiently vague about the concept of value (Werth) so that to admit the cost as a basis of foundation of accounting for Joint Stock Companies (1879, p. 20). In that case a simple evolution of the case law could have been sufficient.

The last step of the story is again due to von Strombeck with a second article devoted in 1882 to the question of the making of balance sheet for Joint Stock companies.

Von Strombeck, as Scheffler, recognized that the problem with the static balances was not that of practical difficulty of valuation : it is always possible if one is decided to apply this theory to find market values, even if necessary liquidation value (Abbruchwerth) (1882, p. 491). No, the problem is a **conflict of interests** between shareholders and creditors implying two kinds of ways for determining a profit (1882, pp. 460 and 494 and 495). Von Strombeck was conscious that the abandonment of the patrimonial balance sheet and its objective value could be dangerous because the new theory of protection of creditors by the sole observation of the operating cash flows may, in case of crisis, have for consequence the disappearance of the companies (1882, pp. 494-495)²⁵. But a special balance sheet was "required" for dividends (1882, p. 461); this "dira necessita" (strong necessity) "must conduct to the system of the stable accounts" (1882, p. 495). As far, at the difference of Scheffler, he thought that the law of 1870 was clearly in favour of the market values and not liable to an interpretation in favour of cost, he underlined that there was no other way as to change the law; it was even "a matter of public interest" (1882, p. 483).

The victory of shareholders and managers and the new law of 1884

This victory was obtained in two steps, the second one being the definitive one.

* The first break against the 1870's legislation was obtained in 1879 with a case from the ROHG (High Imperial Tribunal) handling with the valuation of fixed assets of railway companies; it was declared, in line with the Scheffer's thesis, that the valuation at acquisition cost was not strictly contradictory to the law - (Bd 25, p. 307). Even if important, this decision was restricted to the case of railway companies and subjected to critic as far some leading lawyers deem that it was a denial of the spirit of the law (see Keyssner and Von Strombeck). Obviously this case was not sufficient to solve the problem.

*The definitive solution to the problem was given by a change of the law. A new law, the law of 1884 (Aktienrechtsnovelle vom 18/7/1884. RGBI, p. 123), specifically dedicated to the Joint Stock companies, added new articles in the corpus for Joint Stock companies, notably the articles 185 a and 185 b which are very important for the question treated and which deserve a complete quotation.

. Article 185 a

For constructing a the balance sheet the requirements of article 31 must be applied by taking account the following :

1. Shares, obligations and merchandises which have a stock market or market price may be valued at the maximum at this price... but if this price is above the acquisition or the production cost this cost is the maximum limit not to be trespassed.
2. The other assets (elements) composing the wealth (andere Vermögens Gegenstände") **are** to be valued at the maximum at the acquisition or production cost.
3. Fixed assets and other items which are not devoted to resale but to durable use... may be, without any consideration of an inferior value (geringeren Wert) be valued at the acquisition or production cost, under the condition that a systematic deduction for their use (Abnützung) or a corresponding allocation to a renewal fund (Erneuerungs fonds) will be made.
4. The cost of organisation and administration are not allowed to be registered as assets and must appear for their full amount as expenditure (Ausgabe) in the calculation of the annual profit.

According to the official justification of the law itself (Motiven zu Novelle 1884) this new legislation was composed of two very distinct elements.

The first element was the recognition of the principle of prudence : from 1884 on, for Joint Stock companies, it was no longer possible to recognize non realised profits; this was in line with the evolution of patrimonial (static) accounting in Continental Europe and justified, as it was the case in France, about twenty years ago, by scandals related to the distribution of dividends on the basis of potential profits. If the new law had been limited to the recognition of this principle, it could not be said that the shareholders had succeeded in introducing a new philosophy of accounting in their favour for the obligation to take account of potential losses on behalf of diminution of values would have remained and caused problems.

The very original element of this law was represented by the § 3 of article 185 a that gave the possibility to Joint Stock companies to avoid the impairment of fixed assets (at their lower market values) and to use a cost valuation assorted with a systematic depreciation.

The explanations ("Motiven") of the law are very clear that this new device for fixed assets was dictated by a question of dividends : "if the company had been obliged to take account of market values even for this kind of assets, whose selling price are subject to considerable **fluctuation of prices** due to the relationship of supply and demand, **without that their value in use** (Nutzungswert) **could be changed**, it would have result a full **untrue distribution of profits**" (Motiven, p. 301).

The "Motiven" were also very clear that is part of the legislation was an **exception** to the general "static" rules which remained in place : "the project of law, in relationship with the paragraph 31 of the Commercial Code, takes as a basic principle, that all patrimonial assets are to be valued at their value [it means market value] but not higher than their acquisition or production cost" (Motiven, p. 303). But this exception was the only one exception : the generalisation of a system of distribution of costs as proposed by Sheffler for intangible long term expenses was not accepted as it was notably clearly expressed for organisation and administration costs (see supra article 185a-4).

The nature of the change inferred by the Prussian railroad accounting

In our opinion the events described above clearly show that the "time of railways" was the beginning of the death for cash funds ("cameralistic") and patrimonial (static) accounting styles, at least in Germany.

We have seen that at the very beginning of the period, in the thirties, under the influence of public accountants, a kind of cameralistic accounting had been generally applied to railway companies; it is important to stress that this cameralistic accounting was not a pure one for it has been decided to treat the initial expenditures (for constructions and purchase of rolling stock) not as elements of results (as it should normally have been the case) but as an investment : it was to take the Mieses's expression a "modified" cameralistic accounting.

This already bastard accounting was again changed in the fifties with the more and more massive introduction of a kind of depreciation accounting instead of the registration of expenditures at the time of renewals. Towards the end of the period studied it can be said that, **as far as private²⁶ railway companies** are considered, the cameralistic accounting was dead or nearly so : this was the first victim of the railway accounting battle.

In the seventies, railway directors and some lawyers connected to them led another successful fight against the appliance of static (market oriented) accounting, which was at the time the dominant kind of accounting. As a result of this last fight, in 1884, static accounting was no longer obligatory applied for fixed tangible assets for all Joint Stock companies; it was also the beginning of a (long) agony for static accounting and the first clear introduction of very important element of historical cost accounting. It seems that on this last point (the breakthrough of a kind of dynamic accounting in 1884) there is not much debate among historians.

For example, Walb (p.5) deems that there is a kind of return, after 90 years, to the solutions of the ALR, which were largely marked by a refusal of market value and Barth (p. 117) speaks of a "decisive breach" (entscheidende Bresche) against the common market value (gemeinen Wert) for balance sheet valuation. However, Schneider, while commenting the 1884's law, is more stroked by the appearance of the principle of prudence (lower of cost or market rule) than the development of any kind of dynamic accounting (1995, p. 151).

The reason of the change

Contrary to the previous point there is considerable debate here. We are first going to show what appears to be the opinion of German historians before giving our own interpretation.

Barth, in our point of view, insists upon a **technical point of view** : the patrimonial (static) theory would have failed and needed to be replaced because in "many cases, especially for fixed assets it is almost impossible to find a reliable market value" (1950, p.

53 and also similarly 1953, pp. 116 and 147). He also adds a second argument : even if these technical difficulties could be solved it would result "a totally arbitrary income which has nothing to do with the real profits (Erträge) of the enterprise" (1953, p. 116) because in case of rise of prices it could follow the distribution of unrealised profits (1950, p. 52). It seems to us that this second motive is not important for our case because the static lawyers, beginning with the French ones-as notably Dupin (quoted by Barth himself, 1950, p. 52) and afterwards the German ones have been able to respond to this type of criticism (thanks to the lower of cost of market rule) without changing their basic philosophy of an accounting style for the protection of creditors. So as a conclusion the technical problem remains the main Barth's argument.

The Schneider's thesis seems to be another one, it means a problem of **competence**. Schneider stresses that throughout the twentieth century "the discussion of financial accounting was dominated by lawyers" (1995, p. 133) who were not aware of merchant book keeping that "it was certainly not missing familiarity with double entry book keeping that led this commercial lawyer [he means Keyssner] who led this fight against the static accounting] to calculate distributable profit separately from the balance sheet" (1995, p. 132).

In our opinion these arguments cannot explain the real reasons of the change.

As far as the technical argument is concerned it is interesting to note that von Strombeck himself, however a strong partisan of the "system of stable accounts", acknowledged that "the reason for its adoption was not so much the difficulty to find a true valuation of fixed assets as rather the possibility to use, in particular for the distribution of dividends, a mass of results only depending of the utilities produced by the stable wealth ("patrimonium") (1882, p. 464); he added that "in the case of a patrimonial balance sheet the biggest difficulty and the uncertainty to find an objective value must not prevent from proceeding with a valuation and that in case of doubts... at the worst one can use the liquidation value" (1882, p. 491).

As for the argument of competence, one can wonder why lawyers such as Keyssner and Strombeck were fated to discover the virtue of merchants' bookkeeping while their colleagues authors of the 1870's legislation were unable to make this step. Our explanation is that beyond a question of competence there was a question of social environment : these men "discovered" the "stable accounts" (to use the von Strombeck's expression) because they were the spokespeople for the railway managers and shareholders and expressed their needs...

But what were these needs ? What was the reason for this "impossibility" to use the patrimonial type of accounting as evoked by Keyssner (1875, p. 133) ? What was this "dura necessita" mentioned by von Strombeck(1882, p. 482) forcing to adopt the system of stable accounts ?

Our answer is that "stable accounts" (a marvellously eloquent expression) were necessary for giving **stable dividends** to shareholders, a sine qua condition for the collecting of funds and the development of railway companies and big Joint stock companies. The importance of the question of stable dividends is not only acknowledged by German historians of railway economics. This question also constitutes at that time the very framework of reasoning for all the defenders of the dynamic accounting against the static accounting; whether it is the case of Keyssner (1875, p. 144²⁷) , of von Strombeck (1878 II, p.76²⁸) or of Scheffler (1879, p. 14²⁹) their common fear is the fluctuation of prices and its influence on the distribution of dividends. Even the documents explaining the motives for the law of 1884 have, as we have seen, evoked the problem of the stability of dividends. Our conclusion is that the birth of a specific type of accounting for railway companies and the promulgation of a specific law for joint stock companies was due to the need for a greater stability of dividends than with it could have been reached with the previous types of accounting.

This stability was not only required for the sake of one particular shareholder; it was also required for distributing equally the produce of an investment among the different shareholders who have been participating in this investment all along the period. To say it in a nutshell the birth of a historical cost dynamic accounting in the German legislation was a produce of a craving of shareholders for stable and equally (over time) distributed dividends.

The existence of a theory

The previous developments have shown that during the period 1870-1884 all the main actors of the struggle against the patrimonial accounting defended a kind of historical cost (dynamic) accounting; one interesting question is to know if they have succeeded in the creation of a (new) theory of accounting. This question had already been raised by German authors notably by Walb, Barth and Schneider who disagree about it. We are relating their position before expressing our own opinion.

As soon as 1983, Walb, in his history of the balance sheet dogma, deems that Scheffler "has made an important step in matter of accounting theory" (1933, p. 11); he thinks that Scheffler had "conscious dynamic objectives" (1933, p. 15) and finally had "opened the road for the whole of the future evolution" (1933, p. 17). Also Mieles (1932, p. 13) insists

upon the influence of Scheffler on the thoughts of the great theorist, Simon. On the contrary, according to Barth, it is only after the publication of the 1884 law on Joint Stock companies that the theory of balance sheet tried to find a justification for the use of cost valuation in matter of balance sheet dressing" (1953 I, p. 117); Barth thinks that the movement of ideas towards the historical cost accounting system before 1884 was not conscious, only inspired by practical point of views (1953 I, pp. 156-157).

If we concentrate our study on Scheffler, who benefited from the whole intellectual contribution of notably Keyssner and von Strombeck, we may observe that in order to justify his position in favour of an historical cost accounting Scheffler :

- 1) uses the concept of goal (Zweck) to distinguish different types of assets (assets for permanent use, assets for sale);
- 2) deducts from this classification a type of valuation (valuation at cost for assets for use, valuation at market price for assets for sale);
- 3) deducts from the two previous points an adequate treatment for the main types of assets.

Is there any big difference, for these main elements with the ideas expressed after the First World War by theoreticians of the dynamic balance sheet such as Rieger et Schmalenbach ? In our opinion no one. It seems to us that Scheffler is even a more consequent theoretician as Schmalenbach as far he deducts from his theory the treatment as assets of intangibles expenditures such as organisations costs.

As a matter of fact Scheffler as well as von Strombeck were, contrary to the Barth's view very conscious³⁰ that they lived a battle of ideas about conflicting modes of calculation of profits (see notably von Strombeck, 1882, p. 460); they were even conscious that they defended the interests of shareholders against those of creditors. Their articles were not only proposing a list of practical wishes : they were constructed along an hypothetical-deductive reasoning, and offered for the first time in Germany, if not in the world, the framework of a theory for historical cost accounting.

The contribution of Prussian railway accounting to the development of financial legal accounting

A classical, if not dominating thesis, is that railroad accounting has played a major role in the development of accounting concepts, especially depreciation, and more generally in the development of modern accounting theory. The traditional references are those of Holmes (1975) and Boockholdt (1977). As a matter in fact a German author had expressed

the same thesis as early as 1933 : "the theory of balance sheet was driven towards more clarity by the enterprises with large fixed assets especially railways. This evolution made of the profit and loss statement the main statement" (Walb, 1933, p.7 and 17). As Walb's assertions were never translated into English his views were condemned to oblivion.

According to Holmes (1975, p. 18) "depreciation was a knotty problem for these early railroad accountants. They argued over it... but in the end it was from the very ashes of their disagreements that an modern concepts of depreciation arose Phoenix like fifty years later". Boockholdt while sustaining the same idea (1977, p. 14) enlarged it : "many of the basic concepts of accounting theory such as disclosure, matching measurement of cash flow, had origins in railroad accounting" (1977, p. 9).

However this thesis has been contested by Lemarchand after his study of the historical development of railroad accounting in France. According to Lemarchand, in a general way, if it is likely that, in matter of management, the railway companies have had an influence on the working of enterprises belonging to other sectors, it does not seem so obvious that their accounting behaviour could truly have had one (Lemarchand, 1993, p. 525).

As a matter of fact if we take the example of systematic depreciation (with distribution of cost over the period of use of the fixed assets) it could hardly be supported that this concept has been created by railway accountants and this as well in France as in Germany. In France Lemarchand has shown that, as far as practice is concerned, some examples of such a systematic depreciation can be already found in the XVIIIth century (especially in the second part) : depreciation of horses at the "Forge d'Oberbruck et Manufacture de fer blanc de Wegscheid" in 1739 (Lemarchand, 1993, p. 97), depreciation of furniture (at 5%) by the "Company Rey and Magneval" in 1751 (Lemarchand, 1993, p. 69), depreciation of tools, buildings and horses by the "Manufacture de toiles peintes de Rey" between 1763 and 1792 (Lemarchand 1993, pp. 73, 74,98), depreciation of tools (at 5%) by the "Manufacture de quincaillerie de la Charité sur Loire" in 1767 (Lemarchand 1993, p. 227), depreciation of machinery (at 4%) by the "Manufacture du Logelbach" in 1775 (Lemarchand, 1993, p. 227), depreciation of furniture and tools (at 1/24%) by the "Manufacture royale de velours de coton de Sens" in 1778 (Lemarchand, 1993, p. 156).

The originally feature of Germany in this respect is that as early as 1794 it is possible to find in Prussia a legislation (Allgemeine Preussische Landrecht - ALR - second part § 545) concerning the calculation of profit of commercial companies with a clause enouncing that (in case of no special stipulation by statute) the corporate fixed assets are to be systematically depreciated (see Barth 1953, Lion 1928, Schneider 1987, p. 443, Schneider

1995,p. 129) and, for a comparison of German and French situation in the context of evolution of the fair value concept, (Richard 2005 c).

Of course this kind of (optimally) dynamic oriented legislation was soon rebutted by the static ideas of the Napoleonic Code of Commerce (see Richard 2005 b and c), which was translated in German in 1808 by Daniels (Bösselmann 1939, annexe 4); the French code was notably applied in Rhein provinces even after the collapse of Napoleon³¹ (Steitz, 1974, p. 26) and inspired in the thirties the endeavours of a commercial codification of States such as Württemberg (Barth, 1953, p. 67). This may explain why in Prussia the law on Joint Stock Companies published in 1843 did not any more mention the possibility of a systematic depreciation of fixed assets and presumably went over to a static view. Nevertheless it seems hardly believable that at the beginning of the 19th century the Prussian merchant and lawyer elite was not aware of the ALR and of its mention of a dynamic style of depreciation.

Furthermore, as showed Schneider (1987, p. 451), if it was "not usual to see systematic depreciation based on percentage of fixed assets before the second part of the 18th century" it can be found a number of books (rarely during the 18th century but more frequently at the beginning of the 19th century) that were describing the principle of such a depreciation, the first author being Magelsen (1772, p. 76). The conclusion is that railway accountants and managers have, in no way, contributed to the **creation** of the concept of dynamic depreciation.

But, on the contrary, they have played a very big role in the dissemination, the theoretical justification and the legalization of this concept. The **dissemination** because the majority of railway companies, that represented the biggest companies of the time, have applied this type of depreciation at the beginning of the sixties; the theoretical justification thanks to the publications of railway managers or lawyers closely related to them; the legalization though the articles of the law of 1884 as a result of the pressure of railway lobbyists. To say it in a nutshell there have made of dynamic depreciation and more largely dynamic theory a dominant approach of accounting.

The validity of the "market for excuses" hypothesis

In their article about the demand and supply of accounting theories Watts and Zimmermann (1979) outline their hypothesis of a market for excuses according to which, in a regulated economy, they "expect to observe changes in accounting theory when a new law is passed which impinges on accounting practice" so that "accounting theory has changed **after** the introduction of government regulation" (1979, p. 289, emphasis added).

It is clear that they base their reasoning on the case of US railroad legislation : it is their hypothesis that regulation of profits (primarily of the railroads) "created a demand for theories rationalizing depreciation as an expense" and that "without regulation there was no necessity for depreciation to be a charge systematically deducted each year in determining net income. However, because rate regulation was justified in terms of restricting the economic profits of monopolists (or eliminating ruinous competition) regulation created a demand for justifications arguing for depreciation to be treated as an annual charge to profits" (1979, p. 293). They conclude that accounting theories are generally "normative because they are used as excuses for political action (i.e. the political process creates a demand for theories which prescribe rather than describe the world)." (1979, p. 273).

In the case of the German legislation for railway companies we do not find any evidence for a market for excuses hypothesis .In contrast to the Watts and Zimmermann's hypothesis it seems that the change in accounting theory appeared **before** (rather than after) the law which this theory intended to defend and that this theory was **describing** an already existing practice.

The sequence of the German case is the following one : at the beginning Prussian railway companies produced a special type of balance sheet and had a concept of profit oriented to their needs. This practice had been largely incorporated within the law of 1838, the fundamental law concerning rail companies. This was improved through various administrative regulations from 1838 to 1862, aiming notably to a systematic form of depreciation. Throughout this period, to the best of our knowledge, there has been no article or book presenting a theory in defence of this legislation or control.

The reason for this absence of theory seems to be obvious; the legislation was basically in line with the practices or the desired practices of the managers and shareholders of railway companies. Thus there was no reason to justify any thing.

The scene completely changed in 1862 and 1870 when a new law developed by lawyers working for the interests of creditors (rather than shareholders) obliged the rail companies to produce balance-sheets in total contradiction with their vital interests. As a reaction **against** these laws and in order to get a **new** law more favourable to their interests the railways managers and a few astute lawyers sharing the interests of shareholders against creditors wrote in the seventies** a significant list of articles which, in our view, should be considered as founding a new theory of what we call "dynamic accounting" or "historical cost accounting".

This theoretical weapon in favour of a new law succeeded in 1884 with a law which, for the first time in Germany, offered to all Joint Stock companies (not only railway companies) the possibility of using the dynamic theory for tangible fixed assets.

As a matter of conclusion the German case shows :

- that the theory came **before** the introduction a new law and had been used to justify it ;
- that this theory was largely **describing a practice** in line with shareholders' interests;
- that the argument, at that time, was **frankly advocating** the basic interests of these shareholders; there was no attempt to disguise the needs of short term and regular dividends for hurry and worry shareholders under the umbrella of "excuses".

Based on this case our hypothesis is that accounting theories are a weapon to demolish existing practices or regulations rather than an excuse or justification for existing legislation or practice.

The validity of the ideology of the agency theory

A agency theory, as represented by the fundamental article by Jensen and Meckling on the theory of the firm (1976) expresses three main ideas.

- * **First idea** : in the firm the basic conflict opposes on one side the manager(s) and on the other side the "outside" equity owners and the creditors; the possibility of a conflict between the outside equity owners and the creditors is only marginally indicated in two back-side notes (1976, p. 337 and 339); on the contrary bondholders and outside equity owners are treated together as potential victims of the managers (1976, p. 338).
- * **Second idea** : the basic conflict can be solved by the signature of contracts concerning the monitoring activities, the bonding activities and the emission of shares; these contracts can be fair because creditors and outside shareholders have the possibility to know in advance the manoeuvres of managers. Even the suppression of unlimited liability is accepted by the creditors by means of a fair contract (1975, p. 331).
- * **Third idea** (implied by the two previous ones) : accounting can be considered as an information device solicited in the course of the issuance of fair contracts between managers and outside claimants.

The history of the Prussian railway accounting seems to show that these ideas do not fit reality³². The main conflict in Germany opposed the creditors on one side and the outside

shareholders and the managers on the other side. One could speak of a "theory" of alliance (between managers and shareholders) and not of a "theory" of agency.

The losers of the battle, the creditors, were not in a position to sign any compensatory contract : they had to accept the (partial) disappearance of static accounting because they were weak and they did not have the power to resist the alliance of shareholders and managers.

Accounting, in the course of this battle, was not considered as a source of information on managers' actions but as a means to improve their situation as well as the shareholders' situation in matter of distribution of dividends. The new dynamic theory was not devoted to calculate the performance but to regulate the distributable profit

In a nutshell the issue was not a question of "fair" contracts or "fair" information but of the exercise of harsh power for the sake of the development of a new kind of capitalism.

Concluding remarks : the role of the Prussian railway accounting in the development of the capitalist accounting system

- .On the basis on the French experience, it has been suggested that after the beginning of the industrial revolution (at the end of 18th and beginning of the 19th centuries) the capitalist models of regulated financial accounting went through three main stages of development : the static, the dynamic and the actuarial ones (Richard, 2005 b and c).
- . The history of accounting of private rail companies in Germany shows that in this country the rail companies played a major role in the spread of historical cost accounting principles and that they largely contributed (with big other joint stock companies) to the birth of the "dynamic" second stage, at least in continental Europe.
 - . If the representatives of these rail companies did not invent new concepts of accounting, notably over depreciation, they did, as early as 1875-1879, elaborate a new theory of accounting (the dynamic theory) which had a profound impact, at least on German theorists of the late 19th century and the first part of the 20th century such as Simon, Rieger and Schmalenbach³³.
 - . This new theory was needed to justify the publication of a new law favourable to the interests of impatient shareholders rather those of creditors and to defeat the ideology of public finance and patrimonial (static) theories.
 - . As this theory appeared before (**rather than after**) the law which promulgated the new approach and was clearly advocating the defence of the private interest of shareholders (not those of the public in the strict sense) it seems to be possible to assert that the Watts and Zimmermann's basic hypothesis of the "theory of market excuses" does not fit with these historical developments.
 - . According to these developments, the main reasons for developing the new accounting theory were connected with problems of **dividends**, more specifically with :
 - the necessity to find accounting procedures which would allow the distribution of dividends from the very beginning of the investment cycle even in the absence of revenue;
 - the desire to find an accounting model which would enable the distribution of profits generated by an investment evenly through-out the investment cycle and amongst the different shareholders taking part in the financing of this investment.

Hence, the second stage of development of capitalist accounting seems to have been caused by the question of distribution of profits and dividends and **not of information**. However, as this attempt took place within the frame of the principle of prudence, it was not possible, at that stage of accounting capitalism, to achieve a perfect device for the regulation (smoothing) of the rate of accounting profit : the beginning of the solution was only to be found at the end of the 20th century with the third actuarial stage and the "discovery" of fair value accounting (Richard, 2004 , 2005 b and 2005d).

Bibliography

- Barth, K. (1950)** Die Jahresbilanz der Unternehmung (Selbstverlag des Verfassers - Stuttgart)
- Barth, K. (1953)** Die Entwicklung des deutschen Bilanzrechts (Selbstverlag des Verfassers - Stuttgart)
- Boockholdt, J.L. (1977)** "Influence of the 19th and 20th railroad accounting on the development of modern accounting theory", *Accounting Historian Journal*, p. 9-28.
- Bösselmann, K. (1939)** Die Entwicklung des deutschen Aktienwesens im 19. Jahrhundert (Walter de Gruyter and Co.)
- Brief, R. (1966)** "The origin and evolution of nineteenth century asset accounting", *British History Review*, Vol. XL n° 1, p. 1-23.
- Brief, R. (1967)** "A late nineteenth century contribution to the theory of depreciation" , *Journal of Accounting Research*, vol. 5, n° 2, p. 27-38.
- Bryer, R.A. (1991)** "Accounting for the great "railway mania" of 1845. A great railway swindle ?" *Accounting, Organizations and Society* , vol. 16, n° 5-6, p. 439-86.
- Chatfield, M. (1977)** A history of accounting thought, Second édition - (Krieger)
- Colasse, B. (2005)** Les Grands auteurs en Comptabilité (Editions EMS)
- Ding, Y., Richard, J. Stolowy, H. (2005)** "The four phrases of accounting regulation of goodwill : an illustration of the varying influence of social forces", *Cahier de recherche n° 2005-08 du CEREG*, Université Paris Dauphine.
- Edwards, JR (1985)** "The origins and evolution of the double account system : an example of accounting innovation", *Abacus* vol. 21, n° 1, p. 19-43.
- Edwards, J.R. (1989)** A history of financial accounting (Routledge)
- Edwards, J.R. (1986)** "Depreciation and fixed asset valuation in British railway company accounts to 1911", *Accounting and Business Research*, vol. 16, n° 63, p. 251-263.

- Eichholtz, D.(1962)** Junker und Bourgeoisie vor 1848 in der preussischen Eisenbahngeschichte (Akademic-Verlag. Berlin).
- Faucher, J. (1873)** Der allgemeine Fragebogen der Kgl. Untersuchungs - Commission betreffend das Eisenbahn - Concessionswesen (Verlag von Guttentag - Berlin).
- Glynn, J.J. (1984)** "The development of British railway accounting : 1800-1911", The Accounting Historians Journal, vol. II, n° 1, p.103-18.

- Hansemann, D. (1837)** Die Eisenbahnen und deren Aktionäre in ihrem Verhältnis zum Staat. (Leipzig und Halle)
- Holmes, W. (1975)** "Accounting and Accountants in Massachusetts" CPA Review, May/June.
- Jensen, M.,
Meckling, W.H. (1976)** "Theory of the firm : managerial behaviour, agency cost and ownership structure", Journal of Financial Economics, 3, p. 305-360.
- Keyssner, H (1875)** "Aktienzinsen, Dividende und Bilanz", Archiv für Theorie und Archiv für das allgemeine deutsche Handelsrecht. p. 99-145.
- Kitchen, J. (1974)** Lawrence Dicksee, depreciation and the double account system, in EDEY and YAMEY ed : Debits, credits Finance and Profits (Sweet and Maxwell).
- Laux, F. (1998)** Die Lehre vom Unternehmen an sich (Duncker Humbolt)
- Lemarchand, Y. (1993)** Du déperissement à l'amortissement. Enquête sur l'histoire d'un concept et de sa traduction comptable (Ouest Editions).
- Lion, M. (1928)** "Geschichtliche Betrachtungen zur Bilanztheorie bis zum Allgemeinen Deutschen Handelsgesetzbuch" Sonderdruck aus Vierteljahresschrift für Steuer und Finanzrecht Heft 3
- Littleton, A.C. ,
Yamey, B.S. (1956)** Studies in the history of accounting (Sweet and Maxwell)
- Littleton, A.C. (1933)** Accounting evolution to 1900 (American Institute Publishing Company)
- Magelsen, H. (1772)** Die ersten Gründe des Buchhaltens, samt Anwendung derselben auf die gewöhnlichen Vorfälle der Handlung und Wirtschaft (Iversen)
- Mason, P. (1933)** "Illustrations of the early treatment of depreciation", Accounting, Review, vol. VIII, p. 209-18
- May, G.O. (1936)** "Railroad retirements and depreciation", The Journal of Accountancy, p. 171-84
- Mieles, H. (1932)** Die Erfolgsrechnung der deutschen Eisenbahnen in ihrer geschichtlichen Entwicklung. (Buchdruckerei Joh. Heider)
- Passow, R. (1919)** Die Bilanzen der privaten und öffentlichen Unternehmungen (Verlag von Teubner)

- Pietri, N. (1982)** Evolution économique de l'Allemagne du milieu du XIX^e siècle à 1914 (SEDES)
- Pöhls, M. (1842)** Das Recht der Aktiengesellschaft mit besonderer Rücksicht auf Eisenbahngesellschaften (Hamburg)
- Pollins, H. (1956)** "Aspects of railway accounting before 1863" in A.C. Littleton, B.S. YAMEY, Studies in the history of Accounting (Sweet and Maxwell) p. 332-55.
- Reden, von, F. (1843)** Die Eisenbahnen Deutschlands (Druck und Verlag von Erbst Siegfried Mittler).
- Richard, J. (1998)** "Schmalenbach, Eugen (1873-1955)" in The Handbook of Management Thinking" International Encyclopaedia of Business and Management. Thompson, p. 571-580).
- Richard, J. (2004)** "The secret past of fair value : lessons from history applied to the French case", Accounting in Europe, n° 1, p. 95-107.
- Richard, J. (2005 a)** "Herman Veit Simon, Eugen Schmalenbach et Fritz Schmidt : les "trois S" de la pensée comptable allemande" in B. Colasse. Les Grands auteurs en comptabilité", p. 74-87.
- Richard, J. (2005 b)** "Les trois stades du capitalisme comptable français", in Capron : Les normes comptables internationales instruments du capitalisme financier (La Découverte) p. 89-119.
- Richard, J. (2005 c)** "The concept of fair value in French and German accounting regulations from 1673 to 1914 and its consequences for the interpretation of the stages of development of capitalist accounting", Critical Perspectives on Accounting, n° 16, p. 387.
- Richard, J. (2005d)** "Fair value: towards a third stage of the French accounting capitalism", Cahier de recherche du CEREG n°2005-9. CEREG. Université Paris Dauphine
- Rieger, W. (1936)** Schmalenbachs Dynamische Bilanz (Kohlhammerverlag).
- Scheffler, M. (1879)** "Über Bilanzen", Vierteljahrsschrift für Volkswirtschaft, Politik und Kulturgeschichte, p. 1-49.
- Schmalenbach, E. (1919)** "Grundlagen der dynamischen Bilanzlehre in ZfhF, p. 1-101.
- Schneider, D. (1987)** Allgemeine Betriebswirtschaftslehre. Dritte Auflage (Oldenberg)
- Schneider, D. (1995)** "The history of financial reporting in Germany" Financial Reporting, Edited by P. Walton, pp. 123-155, Academic Press.

- Schrott, J. (1886)** Lehrbuch der Verrechnungswissenschaft, Fünfte Auflage (Manzsche Hof Verlag und Universitäts. Buchhandlung)
- Schüler, H. (1879)** "Die Eisenbahn-Bilanzen in ihrem Verhältnis zum Handelsgesetzbuch", Zeitung des Vereins Deutscher Eisenbahn Verwaltungen : Organ de Verein (Springer) Heft 5 Band 65, p. 65-67.
- Schwann, M. (1915)** Rudolf Camphausen. Denkschriften, wirtschafts-politische Arbeiten und Briefe (Baedekier)
- Simon, H.V. (1886)** Die Bilanzen der Aktiengesellschaften und der Kommanditgesellschaften auf Aktien, Erste Auflage (von Guttentag)
- Steitz, W. (1974)** Die Entstehung der Köln-Mindener Eisenbahn (Selbstverlag Rheinischwestfälisches Wirtschaftsarchiv zu Köln)
- Strombeck von, J. (1878)** "Grundkapital Grundvermögen und Bilanz der AG insbesondere der Eisenbahngesellschaften in Archiv für Theorie and Praxis des allgemeinen deutschen Handelsrechts, Band 37 p. 1-33 und Band 38, p. 13-107.
- Strombeck von, J. (1882)** Zur Bilanz aufstellung der Aktiengesellschaften : in Zeitschrift für das Gesamte Handelsrecht, Neue Folge Band 13, p. 459-508.
- Walb, E. (1933)** Zur Dogmengeschichte der Bilanz von 1861-1919" (Festgabe für Eugen Schmalenbach).
- Walton, P. (1995)** European Financial Reporting, Academic Press.
- Watts, R.L.**
Zimmermann, J.L. (1979) "The demand for and supply of accounting theories : the market for excuses". The Accounting Review n° 54, p. 273-305.

¹ Among the very first ones are lines joining different mines such as the Hardsteiner Review Eberfeld line opened in 1829, and the Deilbach Teilstrecke opened in 1831 (Steitz 1974, pp. 105-109) all founded by an association of private undertakers.

² If they succeeded in doing that it could be the occasion for some founders to get very high profits, along with the leverage effect (Eichholtz, 1962, pp. 154).

³ It was usual during the thirties and the forties to pay only 10% of the shares.

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- ⁴ This deduction could not trespass the level of 3% of share capital without the permission of the State.
- ⁵ According to the calculation made by Hansemann these reimbursements could take 57 years before the State could be the sole owner of the company (Steitz 1974, p. 266).
- ⁶ Steitz interestingly notes that in the thirties, at the level of the Prussian administration, high officers such as Nagler (director of the Post Office) and Rother (who led the negotiation with capitalists such as Camphausen) only knew the public finance (Kameral) accounting (1874, p. 79).
- ⁷ Passow (1919, p. 247-248) underlines that the expression "Reserve fund" is an ambiguous if not unfortunate one; generally in matter of traditional commercial accounting (at the time of Passow) a reserve is an accumulation of profits; but Passow acknowledges that, as a matter of facts, the Reserve fund may be understood as a renewal fund (Erneuerungsfonds) created by deduction of expenses from revenue (1919, p. 249).
- ⁸ These developments are based on Mieles (1932, p. 10).
- ⁹ As noted by Mieles (ibid p. 48) in Cameral accounting cash inflows corresponding to the payment by shareholders of the capital cannot obviously be considered as a receipt for the sake of determination of the yearly result; similarly, repayment of share capital is not an element of expenditure.
- ¹⁰ Some explanations about the appliance of the law were given in 1839 (Mieles 1932, p. 16)
- ¹¹ It is for example the case of the Bonn-Kölner Eisengesellschaft in 1841 (Passow 1919, p. 247).
- ¹² Passow (1919, p. 248-249) and Mieles (1932, p. 10) quotes the case of the Berlin-Stettiner Gesellschaft (1840), there is also the case of the Köln Minden company in 1848 for a part of its fixed assets (Mieles 1932, p. 10).
- ¹³ The ALR law was not a specific law on Joint Stock companies (Laux, 1998, p. 41)
- ¹⁴ In the same vein Mieles (1932, p. 34) who confirms that the law of 1843 has not been applied by the Köln Minden and the Nieder Markisch companies.
- ¹⁵ This acknowledgment is confirmed by a circular instruction of the 29/3/1859 (von Strombeck, 1882, p. 481).
- ¹⁶ These developments are mainly based on Passow (1919, pp. 249-253); for the same view and the same conclusions see also Mieles (1932, p. 11).
- ¹⁷ Even some "old railway companies" such as the Rhein Eisenbahngesellschaft in 1858, the Bergish in 1859 and the Thüringische Eisenbahngesellschaft in 1862 decided to build a renewal fund (Mieles, 1932, p. 12).
- ¹⁸ This law was applied in 1862 in Prussia (Mieles, 1932, p. 12)
- ¹⁹ According to Mieles (1932 , pp. 31-32) the study of the practice during the period 1861-1884 shows that there is an appearance of the commercial balance sheets (under the name of "general balance sheets") in Prussia : this is notably the case of the Rheinische EBG(in 1862), the Berlin-Potsdam Magdeburg EBG, the Berlin-Anhalten EBG, and later the Bergisch-Märkish EBG. However it seems that the railway companies were not totally respecting the "play" of the new laws and tried to introduce within the new balance-sheets some "fictitious items" that had nothing to do with the legal balance-sheet. According to Mieles this rise of the problems with commercial balance sheets is the reason which causes Scheffler to intervene (see below).
- ²⁰ It should be noted however that the 1862 law while reiterating the prohibition of interests on shares went on authorizing the payment of these interests during the period

of construction : on this point the lawyers had taken account of the interests of railway companies.

²¹ See also the declarations of Schüler, Director of the "Deutsche Eisenbahnbaugesellschaft" according to whom the appliance of regulations valid for merchants could be "stupid for enterprises whose object is not handling" (Schüler, 1878, p. 66). Schüler agrees that the valuation of tangible assets and financial participations should basically be based on **value in use** ("Macht zu nutzen") but as far as these values are **very difficult to obtain** it is better to content with acquisition costs (ibid, 1878, p. 67). In any case the recourse to market value could be "a calamity" (Ibid, p. 67).

²² On the beginning of the article (p. 4) the Von Strombeck's classification deals with different types of companies; but on p. 2 and 29 he specifies that inside a same company various types of assets are to be found which can be classified along his principles.

²³ According to Mieles (1932, p. 13) Scheffler had presented his thesis as soon as 1875.

²⁴ Scheffler (p. 34) however distinguishes two kind of objective values : the first one for long term resale (based on actuarial calculation) and the second one for short term resale (based on market value).

²⁵ Scheffler in very modern way "answers" to these anxiety by asserting that creditors must make a personal valuation of the risks they take before lending to a business (1879, p. 35). Scheffler was presumably influent on Von Strombeck.

²⁶ this assertion is not true for state-owned railway companies up to 1927.

²⁷ See the quotations supra in the first part of the article.

²⁸ See the quotations supra in the first part of the article.

²⁹ See the quotations supra in the first part of the article.

³⁰ Mieles (1932, p. 13) says that Scheffler was trying to "justify" the practices of railway companies.

³¹ The result of this situation was that until 1861 Prussia had two law territories : the west part with a French law commercial legislation and the east part with the ALR, which was not a specific commercial legislation (Steitz 1974, p. 26).

³² For another example of this disconnection between agency theory and the historical reality see Ding, Richard, Stolowy (2005).

³³ For more details, notably on Simon who can be considered as a precursor to the system of impairment proposed by the IFRS, see Richard (2005 a).