UNITED
NATIONS

E

Economic and Social Council

Distr.
GENERAL

CES/2003/16
~~30 April~~5 June 2003

ENGLISH ONLY

STATISTICAL COMMISSION and ECONOMIC COMMISSION FOR EUROPE

CONFERENCE OF EUROPEAN STATISTICIANS

Fifty-first plenary session
(Geneva, 10-12 June 2003)

THE ANALYSIS OF FIRMS' PROFITABILITY: WHY STATISTICIANS HAVE TO TACKLE GLOBALISATION ISSUES

Paper submitted by INSEE, France[1]
Revised version

Drawing from the participation in a committee of the French Planning Agency ("Commissariat Général du Plan") focusing on profitability and risk at the beginning of the 2000's, the author discusses why statisticians have to consider and measure financial results, assets and liabilities of subsidiaries abroad in order to assess profitability on the national territory. This issue is related to the fast development of enterprise groups, whose intra flows and stocks of liabilities and assets considerably blur usual statistics. Many of these groups being multinational, statisticians have to overcome the limitation to the national territory of statistical information. The current statistical project on improving the information about the activity of French companies abroad will be presented.

I. THE STARTING POINT

1. The French Planning Agency (CGP) is a public think-tank that tackles many issues at the request of the French Prime Minister. In 2001, the CGP launched an investigation into the financing of the French economy, in particular into the growing influence of stock markets in many industrialised countries. The policy issue behind it was to consider if the growing role of own capital (respectively shares) in the financing of companies (respectively in the assets of households) should be still supported

[1] Prepared by Raoul Depoutot.

as a means to achieve faster growth. Among other things, the working group investigated the impact of the then famous "standard" for financial return of listed companies (i.e. a return on equity - ROE - of about 15%) and its sustainability. The group was divided into four sub-groups (on "return and risk on the new growth path", "non-listed shares", "shares in the households assets", "globalisation"), which consisted of macroeconomists, auditors, financial analysts, national accountants and public statisticians.

2. Economists considered various statistics on profitability, and the interpretation of these statistics was not an easy task. Mainly three types of statistics were available:
(i) statistics on the stock market, which were then showing very high profitability rates;
(ii) statistics drawn from the national accounts, which were showing a much more limited profitability;
(iii) Statistics drawn from business statistics, which were providing a profitability level differing from the other two statistics.

3. Some economists were not dissatisfied with the situation and could cope with it, and provided economic explanations that they felt were compatible with it. Others, and especially those working or having worked in the economic directorate of INSEE, were more cautious and asked for an in-depth investigation of the concepts and methodology defining these statistics.

4. It was later decided to create an additional group to specifically tackle statistical issues related to the challenge raised by enterprise groups in business statistics [1]. The main economic report [2] mentions several statistical issues and their consequences for the analysis.

5. We will successively present the key issues related to globalisation in each of these statistics on profitability.

II. PROFITABILITY OF LISTED COMPANIES (STOCK MARKETS)

6. Although widely and frequently publicised, these data deserve some explanation.
Legally speaking, the listed entities are *corporations* - and not enterprise groups - and their shares are traded on the stock markets. Even the seventh EU accounting directive on consolidated accounts uses somewhat ambiguous terms. However, the underlying economic unit is not the listed legal unit, but the company ("group of enterprises" using the EU statistical vocabulary) controlled by this corporation. This clearly appears in the financial statements that are provided to shareholders. Financial analysts and auditors confirmed during the CGP working group that, economically speaking, the concept of listed enterprise groups was adequate. This is, however, not so clear-cut among statisticians, and official recommendations seem to be lacking in this domain. In France, although they have access to the very detailed non-consolidated accounts of the listed corporations, financial analysts do not consider this information to be of great use for analysis and prefer consolidated accounts instead.

7. Listed groups are frequently multinational, especially for the corporations listed in the restricted baskets of indexes (S&P, Dow Jones, NASDAQ, Nikkei, FTSE, DAX, CAC, Eurostox, etc.). Such corporations are frequently traded on several stock exchanges. Even if the shares are traded on a given

stock exchange, the owners might be located in another country. For instance, private sources assess that non-residents hold nearly 60% of the shares of France's CAC40 companies. Therefore, it is not easy to define a relationship between these corporations and any geographical classification (by region of economic activity, by region of trade for their shares, by region of the ultimate beneficiary owner). Some extra work is needed to delineate this information on a precise geographical basis.

8. Information on their size is necessary as well in order to characterise these companies: in France, among the 100 biggest enterprise groups, ranked according to the number of resident employees, only 60 are listed on the Paris stock exchange. 25 are sub-groups controlled by foreign companies, 7 are not listed French groups and 9 are owned by the state. There is then no simple correspondence between the concept of "listed company" and the size concept.

9. What kind of data is available for these enterprise groups? They provide accounts that are consolidated, i.e. accounts reflecting the activity of all controlled enterprises after removal of all intra-group flows, assets or liabilities. However, these accounts have several limitations for economists:

- they are currently registered on an historical cost basis;
- the consolidation involves the design of "goodwill", which is a much debated asset. Some consider it is part of non-physical assets, others question its meaning. Using consolidated accounts for profitability measurement raises the issue of integrating or netting goodwill in the valuation of own capital;
- there are several sets of norms for consolidated accounts that are currently not consistently implemented in France. They differ a lot, in particular in the registration of goodwill across time (the depreciation or amortization). This will be solved when the EU directive (based on IAS) enters into force;
- geographical breakdown of the accounts, although requested by the current French regulation (and we believe by the IAS as well) is still very scarce;
- comparability over time of consolidated accounts is very limited. Due to the continuous reshaping of these big companies, pro format accounts are necessary. However, they are in general only provided for three-year periods. Frequent changes in the accounting standards used by the companies prevent comparisons of the pro format accounts with the historical ones. Comparability between companies is not totally satisfactory either;
- some sources suggest that the accounting rules are not fully implemented by several companies, due to the limited pressure exercised by the supervision body (whereas corporate accounts are controlled by the tax administration).

10. As a conclusion, published consolidated accounts of listed companies in France provide only limited information that can really be interpreted directly by the macroeconomists.

III. STATISTICS ON PROFITABILITY DERIVED FROM THE NATIONAL ACCOUNTS: IS GLOBALISATION INVOLVED?

11. National accounts provide information on the accounts for different institutional sectors. Considering the sector of non-financial corporations, profitability can be measured by the ratio of gross disposable income to the estimate of own capital in the accumulation accounts.

12. At first sight, these estimates might be suitable. Like all national accounts estimates, they refer to the national territory. The various statistics are deemed coherent, and therefore the considered ratio makes sense. However, a deeper examination draws attention to several aspects:

- How are the shares valorised in the accounts? At current price (market value) or historical cost?
- In the financial assets, there are still detained shares. Should these be netted to obtain the actual profitability?
- As far as the gross disposable income is concerned, is all income attached to foreign controlled companies taken into account?
- Can these statistics be compared with profitability indicators of listed companies?

Valorisation of stocks in the equity item

13. The ESA standards request the assessment of the shares at market value. It is acknowledged by specialists that the assessment of listed companies is much easier than for non-listed companies, since information on the transaction price for the latter is generally lacking. However, even when such information is available, the calculation is quite technical [3].

14. For **listed companies**, things might be much more complicated than generally considered. By replacing book values (drawn from non-consolidated accounts) with market values for the listed corporations, statisticians seem to overlook the fact that the market value for these corporations includes the estimates of all the other corporations owned by the listed one, i.e. they do consider the value of the enterprise group as a whole. Even if the reference accounts used by statisticians were consolidated on the national territory, both estimates would still not be coherent: non-resident subsidiaries would be included in the market value but not in the book value.
The comparison of aggregated book value and market value gives an adjustment ratio.

15. In general, due to the lack of information on transactions on non-listed corporations, the market value of **non-listed corporations** in the national accounts is derived from their book value, using the above adjustment ratio calculated on listed companies. Therefore, the above-mentioned inaccuracy in measurement might have consequences on theses corporations as well.

16. In the French case, where the book value is currently taken from non-consolidated accounts, and limited to the book value of the listed corporations, some change in the method for assessing the value of non-listed corporations should be considered:
- replacing book value drawn from non-consolidated accounts by consolidated book values;
- subsidiaries of listed ones should be eliminated from the set of legal units the value of which should be estimated, since they are already integrated;

- non-consolidated accounts should replace consolidated ones2;
- special care should be given to non-resident affiliates of the listed companies[3];
- quite symmetrically, resident corporations controlled by foreign enterprise groups should probably not be benchmarked on national companies, but on the corresponding foreign companies. The share of this category is not negligible, since it represents about 14% of the workforce of non-financial corporations.

[2] Precisely, the value of stakes mentioned in the consolidated accounts includes in practice goodwill registered on the assets side, since it incorporates the difference between book value and market value of purchased affiliates. Therefore, it is not fit for the calculation of the price to book (PtB) ratio. The book value drawn from non consolidated accounts should be used instead.

[3] In order to make sure that the numerator and the denominator of the PtB ratio refer to the same set of legal units.

Valorisation of shares in the financial assets

17. Two categories of shares should be considered for the purpose of assessing their market value for the accumulation accounts: shares of resident corporations and shares of non-resident corporations.

18. For the first category, the problem is similar to the valorisation of own capital (in the liabilities) from a theoretical point of view. In practice, INSEE conducts a survey that gives satisfactory estimates of the stakes, broken down by corporations in which resident enterprises have invested. So, it could be possible to fine-tune the adjustment of historical value to market value. A detailed methodology is provided in [4].

19. The second category, which is growing due to globalisation, is clearly more complicated to assess, since:

- recording of these shares is made at the historical cost in the accounts of corporations;
- it might be much more difficult to compare historical value/ book value/ with market value, since all this information does not relate to the national territory (and the NSI has no access to individual accounts of the corporations the shares of which are detained, nor to the market value). This is another aspect of globalisation. Even for listed companies, it might be complicated in practice to obtain information on the market value, on the corresponding shares, on the underlying composition of the enterprise group, etc.

Is the gross disposable income estimated with sufficient accuracy?

20. Focusing on difficulties related to globalisation, gross disposable income derived from financial stakes in foreign shares is satisfactory, provided it is possible to implement in practice with sufficient reliability the standards recommended by SNA, i.e. to incorporate reinvested profit corresponding to foreign direct investment.

21. Capital gains or losses might raise more serious issues than reinvested profits: whereas they appear clearly in the accounts when the stake is sold, through exceptional results, they are not necessarily recorded in practice on a yearly basis in the accounts. These gains are particularly difficult to measure for stakes abroad, due to the difficult access to primary information necessary to assess these capital gains. Several recent examples relating to listed companies have shown that the corresponding amount may be huge.

22. For the record, let us mention the well-known transfer pricing issue, and the possibility that enterprise groups might have the possibility to channel profit where taxes are the lowest.

How to compare SNA statistics with those on listed companies

23. This comparison reaches the limits of national accounts: whereas national accounts focus on a territory defined by geography and the extent of a political power, stock markets focus on ownership (and symmetrically ignore largely geographical bounds). For listed companies that are very international

(the non-financial enterprise groups listed in the French CAC40 employed in France in 2000 only one third of their worldwide workforce - see [5]), this is clearly not an appropriate benchmark. Furthermore, since listed companies are on average much bigger than non-listed ones, comparisons of average profitability with other homogeneous sub-populations were considered necessary: comparisons for the various size classes and for different industries are also required.

24. Since listed companies do not publish consolidated accounts for sub-territories of activity - like France - and since national accounts do not tackle this category as an institutional sub-sector, comparisons could only be very superficial. Although the French national accounts for the institutional sector of non-financial corporations are based on individual data, and can in theory be broken down into sub-sectors, it was felt that developing specific accounts for such a category would be much too expensive for a one-off survey.

25. The only solution was then to turn towards business statistics.

IV. BUSINESS STATISTICS ON PROFITABILITY AND GLOBALISATION ISSUES

26. INSEE has developed an integration system for business statistics [6] that provides a census, based on administrative data, of financial reports for all businesses. In particular, for each corporation an income statement and a balance sheet are available. These accounts are non-consolidated ones.

27. Using the national register of corporations, it is possible to isolate the population of listed enterprise groups (provided some care is taken to consider all sorts of situations, like those where the listed corporation in a group is not the head of the group, or like those where several corporations are listed). Other statistical characteristics like main activity code or size class are available in our database.

28. In order to measure profitability, the average financial return of each category is defined as the ratio of the total net profit by the total of own capital.

29. The first step consisted in a calculation of these ratios broken down by size and legal status, taking the corporation as the reference statistical unit, see [7]. The own capital was measured at book value, not at market value. These ratios - which were quite low, even under such valuing of own capital - have confirmed that the relevant statistical unit was not the corporation. Two obvious limitations were faced:

- any breakdown by main activity emphasizes the role of a specific industry: holding corporations. This industry has a huge own capital (about 4/10 of the institutional sector of non-financial corporations), whereas its net result is low. This is due to profit reinvested in some of its subsidiaries;
- any breakdown by size class gives huge weight to very small businesses, since some holding corporations have a very limited workforce but a high own capital.

30. Therefore, it was felt that statistics on profitability derived from present business statistics also have serious shortcomings for economists. Some of these shortcomings relate to the valuing of

characteristics in the accounts (in particular property, plant and equipment or own accounts). Others are due to the structure of enterprise groups that allow a disintegration of the company into several corporations with unusual profiles. The latter problem occurs frequently for global companies. Let us see in more detail how these problems could be tackled at present.

31. The natural approach in such a context is to consolidate the available individual information on corporations, in order to build consistent units for economic analysis.

32. Using consolidated accounts produced directly by businesses would be the best solution. However, as mentioned above for listed companies, consolidated accounts are in practice not sufficiently - if at all - broken down by geographical area. Which means that they cannot be used directly for enterprise groups that have at least one subsidiary abroad (and hence especially for resident subsidiaries of foreign groups). For France, these enterprise groups have a workforce of about 5.7 million people (among which 2.2 million work in foreign controlled resident corporations), whereas enterprise groups without foreign affiliate employ 1.6 million and independent corporations - i.e. corporations outside any group - have 5.4 million employees. Global companies in France are just too important to be ignored for such surveys on economic behaviour of firms.

33. Another solution is to design statistics that would approximately consolidate the individual data provided by the non-consolidated corporate accounts, making use if necessary of worldwide consolidated accounts. Whereas this “statistical consolidation” is obvious for additive characteristics (like workforce, tangible assets, value added, investment, non-financial investment, operating profits, salaries paid), it requires additional information for other characteristics (like sales, dividends paid, net financial income, debts). In particular, information on intra-group flows and liabilities is necessary. More precisely, information on intra-group flows (respectively liabilities) should be broken down into two categories: flows between French corporations of the group and flows between French and foreign corporations of the group. See the annex for a more detailed explanation. In the present corporate accounts, a few intra-group flows and liabilities are reported (interest charges paid to other corporations of the group, interests and dividends received from other corporations of the group, loans to other corporations of the group, debts to other corporations of the group). Extra information is necessary on the accounts of the non-resident affiliates of resident groups of enterprises as well.

34. This approach requires some testing, important resources and some time to obtain results. It was clearly not possible to implement it within the scope of the CGP working group.

35. The group had to state the discrepancy of these three indicators: in 1999, whereas national accounts profitability[4] amounted to 4%, business statistics indicated about 9% (with 5.5% for listed corporations and 10% for non-listed ones) - whereas consolidated accounts led to about 8% for listed companies. A similar investigation of coherence has also been recently conducted in the US, with a different reporting system [8].

---

[4] Net profitability.

V. DATA COLLECTION ISSUES

36. Ideally, information on (consolidated) business accounts both worldwide and nationally would be necessary to supply national economists with relevant information. The intra-group flows and liabilities between resident corporations and non-resident corporations are also necessary to distinguish in the resident accounts what is related to activity abroad.

37. Very probably, some requests would ask for more detailed information, for instance by country of residence for subsidiaries abroad. To a certain extent, the demand would be as detailed as for external trade or for the Balance of Payments or for Foreign Direct Investment (or for FATS). For multi-activity companies, some breakdown could be felt to be necessary as well.

38. In addition, the analysis of intra-group flows and liabilities between all the countries of residence would probably draw interest as well.

39. If all these requests were to be satisfied by statistical inquiries, it would amount to an important increase of the statistical burden on businesses, that professional associations would probably not accept.

40. Therefore, INSEE is engaged in an extension of its statistics on enterprise groups that will be based on existing information, and will assess which share of the demand for statistics can thus be satisfied.

41. The statistics would extend the current use of non-consolidated accounts combined with the annual survey on financial links (LIFI) [9] by using:

- consolidated accounts, which are by law compulsory for enterprise groups above some thresholds (i.e. about 3500 non-financial enterprise groups in France) and which have to be published;
- an existing light survey conducted by the ministry of Finance on subsidiaries abroad.

42. The present discussion of a new EU regulation implementing FATS is an opportunity to give a legal framework to the exchange of individual data between national statistical compilers in order to avoid duplication of work, since in every EU member state, businesses in the FATS scope would be canvassed directly or indirectly several times: by the national statistical compiler in charge of the structural business statistics of the country in which the corporate is resident and in each country in which it has subsidiaries (if any) by the national statistical compiler in charge of the inward FATS, and (possibly) by the national statistical compiler in charge of the outward FATS of the country in which the resident corporate has its group head. A first step would be to build a common statistical register of corporations in order to easily identify all corporations in the EU.

43. French statistical departments and INSEE have experience in measuring cross-border intra-group flows of goods [10]. These statistics are based on a specific statistical survey that makes use of individual data previously collected in order to compile the external trade statistics. Such statistics bring complementary information to the statistics drawn from companies' accounts. The challenge is to keep

reducing the cost of data reporting for such surveys. For each type of external trade flow, separating intra-group flows from other flows requires some work from the reporting unit.

44. The French Central Bank is responsible for Balance of Payments and Foreign Direct Investment statistics. Therefore, it registers pieces of information that are closely linked to the knowledge of enterprises groups (FDI indicates financial links between resident and non-resident corporations). In order to produce consistent inward FATS, our National Committee for Statistics (CNIS) has requested exchange of information between INSEE and the Central Bank [11].
The new EU accounting regulatory committee could be an opportunity to transmit to regulators the needs of economists and of business statistics users, as they have been expressed to statisticians. An adequate integration of information requests in the accounting rules would in the end save resources for corporations.

VI. CONCLUSION

45. This example of profitability has been chosen, since it is at the core of current economic analysis: investors look for high profitability companies, entrepreneurs locate their establishments in order to maximise profitability, etc. Other economic challenges could have been developed and would have lead to similar needs: for instance analysis of the role of R&D in businesses, of the correlation between size and return, etc. To produce statistics on any factor that is organised globally by businesses, information on activity abroad is required in order to produce relevant information.

SOURCES

[1] Commissariat Général du Plan, « L'appareil statistique français face aux groupes d'entreprises », rapport du groupe présidé par R. Depoutot, 2002, available at http://www.plan.gouv.fr/
[2] Commissariat Général du Plan, « Rentabilité et risque dans le nouveau régime de croissance », rapport du groupe présidé par D. Plihon, 2002, available at http://www.ladocumentationfrancaise.fr/brp/notices/024000552.shtml
[3] Picart C., Valuing unlisted shares: the contribution of the INSEE financial links survey', OECD meeting of national accounts experts, 2002.
[4] Picart C., « Valorisation des actions non cotées », Insee working document n°E2002-13, December 2002, available at http://www.insee.fr/fr/ppp/doc_travail/docs_doc_travail/E0213.pdf
[5] Dervieux L., 'L'internationalisation des groupes non financiers du CAC40', document de travail, INSEE, 2002.
[6] Augeraud P. and Chapron J.E., 'Using Business Accounts for Compiling National Accounts: the French Experience', Oct 1997.
[7] Casel J. and Bardos M., "Structures financières des entreprises non financières" in Milot J.P. & al. « Actions non cotées - modes de valorisation et poids économique », rapport au Commissariat Général du Plan, 2002, available at http://www.plan.gouv.fr/
[8] Petrick K.A. « Comparing NIPA profits with S&P 500 profits », Survey of Current Business, BEA, April 2001.

[9] Chabanas N., "French enterprises belonging to groups as seen in the “Financial Links” surveys from 1980 to 1999”, Insee working document n°E2002-04, February 2002, available at http://www.insee.fr/en/ppp/doc_travail/docs_doc_travail/E0204ANG.pdf
[10] Guannel B., Mabile S. and Plateau C., “Les échanges internationaux au sein des groupes », Ministère de l’Industrie, SESSI, 2002 available at http://www.industrie.gouv.fr/biblioth/docu/4pages/f2b_4pag.htm
[11] CNIS, “Foreign Direct Investment in France” working document n° 64 A, 2002, available at http://www.cnis.fr/ind_doc.htm

ANNEX: MORE ON "STATISTICAL CONSOLIDATION"

1. Let us start by calling "internal intra-group flows" [respectively "external intra-group flows"] all flows between resident [respectively between resident and non-resident] corporations of a given enterprise group. For any flow characteristic *X* (for instance, sales of goods or purchase of goods), if we denote *XIG(c,g)* [respectively *XIIG(c,g)* and *XIEG(c,g)*] the intra-group flow [respectively the internal intra-group flow and the external intra-group flows in the considered country] of corporate *c* of the enterprise group *g*, for the characteristic X, we have:
$\sum_{c \in g} [X(c,g) - XIIG(c,g)]$ is the consolidated value of characteristic X for the considered country. For accountants, this would be taken as a very simplified view, since very often consolidation implies some harmonisation of accounting rules between the various corporations controlled by the same company. And hence the above equality holds only approximately.