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**The International Investment Position: Measurement Aspects and Usefulness for  
Monetary Policy and Financial Stability Issues**

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# **The International Investment Position : Measurement Aspects and Usefulness for Monetary Policy and Financial Stability Issues**

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## **Abstract**

The international investment position (IIP) is the balance sheet of a country's external assets and liabilities. It can be used to measure the degree of financial openness of a country and to provide indications on the sustainability of its external debt. As such, it is a helpful tool for monitoring financial stability. Although studies of the IIP are fairly new, we shall review some mechanisms through which this aggregate can impact on variables relating to monetary policy, such as interest rates and exchange rates for a medium to long-term horizon. These variables may in turn explain shifts in the external balance sheet, due in particular to revaluation changes, that may lead to wealth effects at a macroeconomic level. As an illustration we shall briefly analyze developments in the French IIP during the 1990s. We shall conclude by suggesting ways of improving the compilation of external balance sheet statistics.

Keywords : International investment position, balance of payments, external debt, monetary policy

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# 1. Introduction

The international investment position (IIP) under the form of a balance sheet covering all the external assets and liabilities of a country is a rather new concept with respect to other statistical aggregates designed at a national level. Indeed, only in 1993, with the publication of the fifth edition of the *Balance of Payments Manual*, did the International Monetary Fund (IMF) lay down a series of common principles for the reporting and valuation of financial claims and liabilities vis-à-vis foreign countries. Until then, only a limited number of developed countries had regularly published an IIP in accordance with their own methodologies. Even today, only a few countries produce IIP aggregates: at the beginning of 2002, 78 countries provided the IMF with an IIP, of which 57 on a yearly basis and 21 on a quarterly basis.<sup>2</sup>

In part, IIP statistics developed slowly due to complex methodological problems relating to the construction of this aggregate, notably issues regarding stock valuation and reconciliation with flows recorded in the balance of payments. More fundamentally, the IIP has become particularly relevant in the light of the financial globalization process under way for the last twenty years. While countries recorded limited cross-border financial flows – mainly of public origin – in their balance of payments financial account, reserve assets and external public debt were sufficient to assess the net position vis-à-vis other countries. However, the huge development of cross-border private financial transactions since the early 1980s, as a consequence of the general trend of liberalization of capital flows, makes it all the more useful to have a complete and detailed IIP showing a functional (direct or portfolio investments, loans and deposits) and sectoral (general government, monetary authorities, banks and other sectors) breakdown.

The development of IIP statistics reflects both the growing internationalization process of large companies and the increasing role of capital markets in the financing of national economies. However, beside being a very topical subject, the IIP as a financial indicator remains little used and often quite unknown among economists. This situation is essentially due to objective factors, i.e. a lack of historical data as aggregates are recent, a data frequency limited on the whole to a yearly periodicity and different methodologies complicating the interpretation and comparison of national data. Yet the usefulness of the IIP is not in doubt. It provides very comprehensive information for central banks, as it makes it possible to estimate the consequences of a lasting external surplus or deficit of a country, as well as those of domestic or foreign shocks on the value of stocks of external financial assets and liabilities.

The structure of the paper is as follows. Section 2 situates the IIP within the panel of other statistical indicators and deals with a number of issues such as valuation problems that have to be considered before any analysis is made. Section 3 illustrates the usefulness of the IIP for monitoring financial stability and for assessing the impact of monetary policy decisions and section 4 presents the different possibilities of enhancing the usefulness of these statistics.

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<sup>2</sup> These figures do not include the ECB which has been publishing an annual IIP for the euro area from the end of 1998.

## 2. What is the IIP ?

### 2.1. The role of the IIP within the panel of other statistical indicators

The *Balance of Payments Manual (Fifth Edition)* published by the IMF provides the following definition : “the international investment position is the balance sheet of the stock of external financial assets and liabilities. The financial items that comprise the position consist of claims on nonresidents, liabilities to nonresidents, monetary gold, and SDRs.” The IMF recommends that IIPs be compiled on a yearly basis, but encourages their quarterly publication. The IIP has been included in the series of statistical indicators covered by the special data dissemination standard (SDDS) implemented by the IMF in 1996 and to which 50 countries have subscribed so far.

Insofar as it represents the external balance sheet of a country, the IIP is complementary to balance of payments (BOP) statistics. Indeed, flows reported in the financial account and reserve assets, together with revaluations and other adjustments, can account for the variation of the position from one period to another. It therefore makes it possible to check the consistency between both sets of statistics. This is the main reason why the IMF dealt with the IIP methodology in a joint manual with the balance of payments, adopting the same item classification for the IIP as for the financial account of the BOP.

**Figure 1 : International investment position : standard components**

	Position at the beginning of the year	Transactions (BOP flows)	Price variations	Exchange rate variations	Other adjustments	Position at the end of the year
<b>Assets</b>						
1 Direct investment						
1-1 Equity capital and reinvested earnings						
1-2 Other capital						
2 Portfolio investment						
2-1 Equity						
2-2 Bonds and notes						
2-3 Money market instruments						
3 Financial derivatives						
4 Other investment						
5 Reserve assets						
<b>Liabilities</b>						
1 Direct investment						
1-1 Equity capital and reinvested earnings						
1-2 Other capital						
2 Portfolio investment						
2-1 Equity						
2-2 Bonds and notes						
2-3 Money market instruments						
3 Financial derivatives						
4 Other investment						
<b>Net position</b>						

Source : IMF, *Balance of Payments Manual (Fifth Edition)*

As regards portfolio investment and other investment, four sectors must be distinguished : monetary authorities, general government, banks and other sectors.

The reconciliation process of flows and stocks is described by Committeri (2000). The IMF (1993) makes the following distinction between the different sources of changes in stocks :

- balance of payments flows related to the financial account and reserve assets. Excluding errors and omissions, these flows offset those of the current and capital accounts, thus enabling to determine the country's external surplus or deficit ;
- price variations of financial assets or liabilities resulting for instance from changes in stock market prices. Except for "other investments" which are recorded for their nominal value, all other items in the IIP should in principle be valued at market prices ;
- impact of currency revaluation in comparison to the previous period ;
- other adjustments that do not arise from transactions, such as reclassifications, allocations of SDRs or debt cancellations.

This can be summarized by the following approximated equation for one specific security (adapted from Committeri, 2000):

$$S_n = \frac{p_n}{p_{n-1}} \times \frac{e_n}{e_{n-1}} \times S_{n-1} + \sum_{m=1}^{12} \frac{\bar{p}_n}{\bar{p}_n^m} \times \frac{e_n}{e_n^m} \times (F_n^m + NT_n^m)$$

where  $S_n$  stands for the stock of this security held at the end of year  $n$ ,

$p_n$  the price of the security at the end of year  $n$ ,

$\bar{p}_n^m$  the monthly average price of the security during month  $m$  of year  $n$ ,

$e_n$  the applicable exchange rate at the end of year  $n$ ,

$e_n^m$  the monthly average exchange rate during month  $m$  of year  $n$ ,

$F_n^m$  the monthly BOP flow for month  $m$  of year  $n$ , and

$NT_n^m$  non-transaction changes occurred during month  $m$  of year  $n$ .

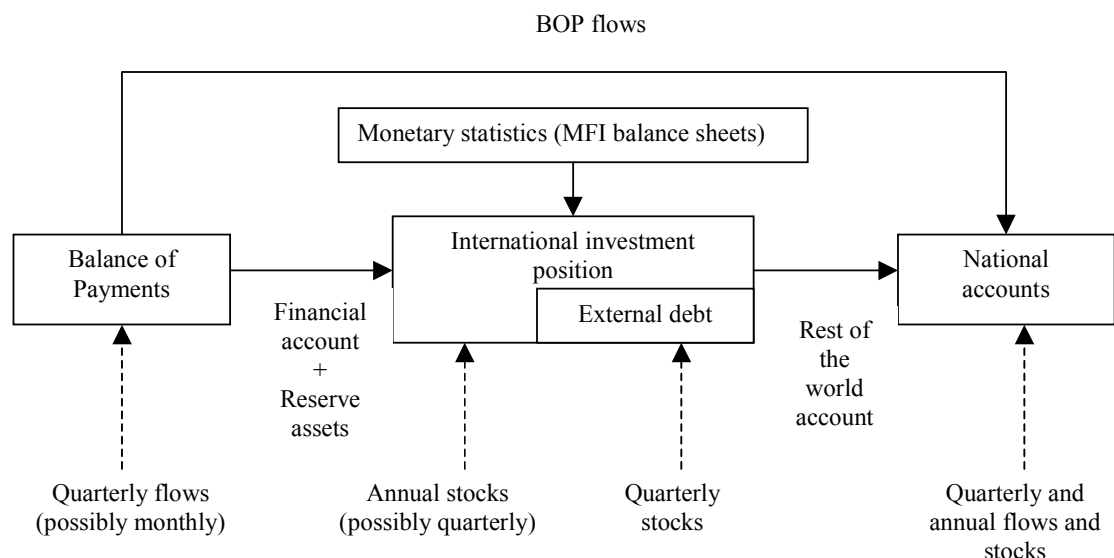
There is also a close relationship between the IIP and the external debt which in practice represents a sub-section of the IIP. As regards external debt, international organizations have made considerable efforts to improve the transparency and readability of statistics published by countries. Thus, within the framework of the SDDS, the IMF has scheduled a publication of the external debt aggregate for participating countries on a quarterly basis starting as of end of March 2003, the reference date. The methodology for compiling external debt statistics has been updated by the Inter Agency Task Force on Finance Statistics (IATFF)<sup>3</sup> in a guide published by the IMF in November 2001 and is entirely consistent with the methodology adopted for the IIP. In practice, the external debt covers – together with identical items – all the liabilities reported in the IIP except for equity capital in direct and portfolio investment, reinvested earnings of inward direct investment, and liabilities within the financial derivatives item. However, additional information is required for external debt statistics with a breakdown based on the remaining maturity (under one year/over a year).

Finally, the IIP is integrated in the national accounts (rest of the world account). For this reason, when the IMF laid down the foundations for the IIP methodology in the *Fifth Manual*, it favored the greatest possible integration of these statistics in the revised System of National Accounts (1993 SNA). The aim is to achieve a certain consistency between both sets of statistics, i.e. the balance of payments and the IIP, and the national accounts, through common methodological standards (reporting based on the same types of financial transactions, on the notion of residence and on identical valuation rules). At the same time, presentation standards still differ : national accounts focus on an analysis by financial

<sup>3</sup> The IATFF was created in 1996. Its members are international organizations interested in financial statistics : the BIS, the Commonwealth Secretariat, the ECB, Eurostat, the IMF, the OECD, the Paris Club Secretariat, the UNCTAD and the World Bank.

instrument and institutional sector as outlined in the *1993 SNA*, which is more detailed and not fully comparable to balance of payments and IIP data. Another problem lies in the use by national accountants, for certain items related to the rest of the world sector, of data differing from balance of payments or IIP data e.g. when certain breakdowns are not available or valuation methods differ in practice. This matter can be solved through a reconciliation process led jointly by statisticians in charge respectively of these two aggregates. In the case of France, gaps existing before the publication of the *Fifth Manual* between the IIP and the rest of the world account have since almost entirely disappeared.

**Figure 2 : Links between the IIP and the other main statistical aggregates**



## 2.2. Main practical problems to be considered before analyzing the IIP

With economists tending to ask for shorter lags for the disclosure of financial information, the main disadvantage of the IIP is obviously its low publication frequency, i.e. quarterly, if not yearly, and its long production delays. The IIP is published six to nine months after the reference date<sup>4</sup> and a large part of it is based on estimates, e.g. direct investment and portfolio investment figures will generally be revised at the next publication when actual stock data are available.

Statisticians have to use data from various sources to compile the IIP and face problems very similar to those encountered for the compilation of the balance of payments.<sup>5</sup> In principle, balance sheet data are available on a monthly basis for monetary authorities and the banking sector (monetary and financial institutions or MFI) for monetary statistics purposes, though marked-to-market data may be missing. Central government data are usually available; other central government agencies included in the general government sector also provide annual stock data. However, external claims and liabilities of “other sectors” may be less accurate. Some other sectors’ financial flows may be reported by banks,

<sup>4</sup> Within the SDDS framework, the IMF requires the IIP be published within six months after the end of the year.

<sup>5</sup> The euro area IIP is particularly complex to elaborate. At present it is only compiled on a net basis, by aggregating net IIPs from all member states under the assumption that intra bilateral positions cancel out. However net assets and net liabilities should be available with the release of the IIP at end of 2001.

since they process most of the capital transfers abroad. Yet the reporting of stocks must be obtained through surveys relating to assets (or liabilities) with non resident counterparts, like for direct investment. In addition, households and companies may show some reluctance to provide statistical reports, e.g. for privacy reasons. Besides, unlike the financial sector, non-banks are generally less used to giving marked-to-market information.<sup>6</sup>

Financial disintermediation makes the problem even more acute, since the increase in cross-border transactions has essentially involved other sectors in the major developed countries. In the case of the French IIP, at the end of 2000, non-banks accounted for 48% of external assets and 52% of external liabilities. These figures were both below 30% in the early 1990s.

The data collection of financial derivative stocks as well as their valuation is uneasy. It is especially hard to make the split between assets and liabilities as some of these instruments (swaps) can move from one side to the other throughout their life. Furthermore, different valuation methods can be applied (replacement cost, valuation at credit risk equivalents, stress value, etc). These problems can explain why a large number of countries which publish an IIP do not include any data on financial derivative stocks. So far the overall net outstanding amounts of these instruments has remained subdued.

Where actual stock are not available, stocks are derived from flows, taking into account exchange rate and price variations. This is probably the most sensitive part of the work, particularly in periods of high volatility of financial markets. Balance of payments flows are indeed recorded at market value at the time the transaction took place i.e. “*at the actual price agreed upon by transactors*” (IMF, 1993), while stocks should be valued at market price at the end of the period to which the balance sheet relates. Hence the need to revalue flows and the initial stock in order to compile an estimated final stock. In France, this revaluation is currently made under the very strong assumptions that BOP flows are evenly distributed and exchange rates and prices vary linearly over the period under review. Initial IIP estimates should therefore be considered with much caution.

Independently of the problem of deriving stocks from flows, the method of stock valuation, when actual stock data are available, is an issue in itself. One can distinguish three methods of valuation of IIP stocks :

- 1) the historical cost valuation (using information from the asset side of the balance sheets of investors),
- 2) the book valuation (information from the liability side of the balance sheets of direct investment companies, issuers or any beneficiary of foreign investments), and
- 3) the market valuation (using information from financial markets).<sup>7</sup>

Short-term and long-term loans and deposits to/from banks and non-banks are usually recorded at historical cost, while official reserve assets are valued at market prices at the end of the period.<sup>8</sup> However the question is more complicated for direct investments in equity capital and portfolio investments in domestic or foreign securities.

Valuation methods may differ depending on whether the financial instrument materializing the investment is quoted or not. Most portfolio investments are made in quoted instruments, for obvious

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<sup>6</sup> BIS international banking statistics can be used as mirror statistics to get data on non-banks' deposit holdings in non resident deposit institutions.

<sup>7</sup> The U.S. Bureau of Economic Analysis proposes a fourth method to value direct investment at current-cost, “*using a perpetual inventory model for plant and equipment, general price indexes for land, and special adjustment factors for inventories*” (Landefeld and Lawson, 1991). This method relies on information from the asset side of the balance sheets of direct investment companies.

<sup>8</sup> The issue of market valuation of loans or deposits is fraught with difficulties as shown by the discussion about the implementation of the “full fair value” principle to banks' balance sheets.

liquidity reasons. On the contrary, we observe, at least in France, that the greatest part of direct investment is directed toward unquoted companies.

When the instrument materializing the investment is quoted, market value can be estimated either on an aggregate basis using market indices, or on a security-by-security basis using commercial or public databases. As shown by Committeri (2000), the results obtained by the second method are unsurprisingly much closer to actual values than aggregate estimates.

In the case of direct investment in unquoted companies, several methods may be used to estimate market value. Most of them are based on the extrapolation to unquoted companies of ratios which can be observed for quoted companies, e.g. ratio capitalization / nominal capital or capitalization / own funds at book value, price earnings ratio, etc. However, such an extrapolation requires that unquoted companies be comparable to quoted companies (comparable size, same sector of activity, etc), which may be a strong assumption.

Market value can also be estimated by discounting future cash flows to the present value. This method is commonly used by financial analysts and is easy to apply provided that future cash flows are known with certainty (as for fixed income securities) or can be estimated without much difficulty after choosing the relevant discount rate. In practice, for the valuation of direct investment stocks in equity capital, past net operating results can be used as a proxy for future cash flows, while a long-term interest rate is used as discount rate. Most of the time though, direct investment stocks both in quoted and unquoted companies included in the IIP remain at book value (no market value is estimated).<sup>9</sup>

The choice of a valuation method has major consequences. In 1990, the U.S. Bureau of Economic Analysis temporarily suspended the publication of the net IIP of the United States, because of concerns regarding valuation methods (Landefeld and Lawson, 1991). In the case of the French IIP, two different figures for direct investment stocks are published, one at book value and the other at market value. At the end of 2000, the market value of French inward and outward direct investment stocks was more than twice the book value. At the time, the net French IIP was positive (net assets of EUR 81.2 billion) when considering direct investment stocks at market value, but negative (net liabilities of EUR 127 billion) when taking direct investment stocks at book value. The difference reflects significant price revaluations following stock market changes. In 2001, these changes may lead to a reduction in marked-to-market direct investment stocks at the end of the year, as main stock markets have been falling almost continuously over the period.<sup>10</sup>

It is therefore important to be aware of the methods of compilation and valuation before analyzing the IPP, which is the subject of the next section.

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<sup>9</sup> The ECB is considering a method mixing book valuation for direct investment in unquoted companies and market valuation for direct investment in quoted ones. However, given that a majority of member-states are currently unable to send marked-to-market data, the euro area direct investment position is still compiled at book value.

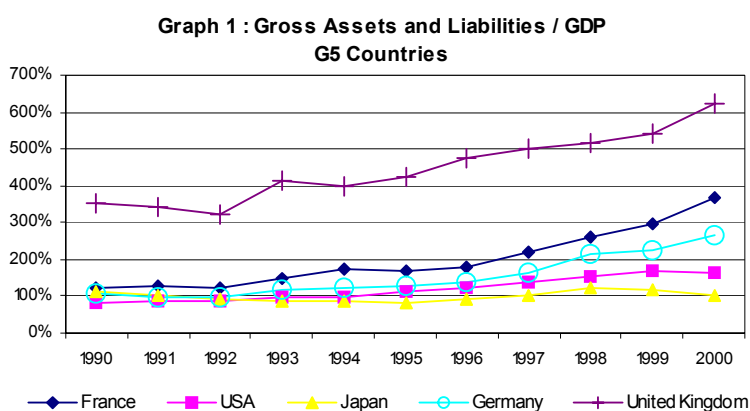
<sup>10</sup> First estimates based on flows accumulation indicate a reduction in French marked-to-market direct investment stocks at end-2001 in spite of positive net flows of foreign direct investment to France and French direct investment abroad. Inward stocks thus decreased from EUR 694.4 bn at end-2000 to EUR 636.8 bn at end-2001, while outward stocks fell from EUR 1090.5 bn to EUR 1029.2 bn.



### 3. Use of the IIP as an analysis tool for central banks

#### 3.1. The IIP as a measurement of the financial openness of a country and an indicator of external debt sustainability

The IIP in all its components is probably the statistical aggregate that best reveals the scale of financial openness of an economy. As cross-border financial flows have been growing during the last twenty years, the ratio of total external claims and liabilities to gross domestic product for the main developed countries soared dramatically (graph 1).



Source: IMF, *International Financial Statistics*

The IIP provides a comprehensive measurement of the outstanding claims and liabilities of an economy. As such, it serves as a basis for assessing the risk of a country experiencing a short-term financial crisis (liquidity crunch) or a long run financial crisis (solvency risk), in accordance with the methods of analysis commonly implemented by international organizations.

Obviously, this risk will be assessed differently according to the degree of financial development.

**In the case of emerging countries**, the external debt aggregate remains more relevant for measuring the risk of financial instability. Indeed, apart from reserve assets, external claims (mostly in private hands) are most of the time unavailable to cover external liabilities, particularly when these are owed by the central government or public administrations. Furthermore, the revenues drawn from the assets are generally not repatriated. This is probably the case in Argentina : last data released at end 2000 showed external liabilities amounting to USD 226.8 billion, representing 80 % of the GDP for the same year. Meanwhile, claims amounted to USD 152.4 billion (thereof 26.9 billion of reserve assets) bringing the debit balance of the IIP to USD 74.4 billion (26 % of the GDP). Yet the outstanding amounts of financial claims reported in Argentina's IIP largely reflect the extend of capital flight initiated by local private agents and therefore cannot be considered as a resource to cope with a financial crisis.

However, the IIP is useful for emerging countries as it gives retrospective information on the impact of the capital account liberalization on the different types of cross-border financial flows. The progressive dismantling of exchange control systems inevitably causes the swelling of cross-border financial flows, thus making it difficult to anticipate the behavior of economic agents and heightening risks of a financial crisis during the transition period. These risks result either from an uncontrolled

(short-term) capital inflow, or from capital flight abroad. In addition to the analysis of flows via the balance of payments, the IIP can therefore be used to monitor the sequencing of liberalization through the impacts observed on the external balance sheet of the country.

**In the case of developed countries** whose national currencies are internationally accepted and which do not present a default risk, the IIP seems to be the appropriate tool for assessing financial stability. Indeed, debt sustainability is in this case better assessed by considering all the external liabilities recorded in the IIP. However this assessment should not be restricted to the net position but should also cover gross stocks of external claims and liabilities which make it possible to value the wealth effects resulting from changes in exchange and interest rates. Furthermore, this analysis of wealth effects should be conducted not only at an overall level, but also according to the various breakdowns – by instrument and by sector – available in IIP data.

## Interpretation of the financial openness ratio

The financial openness ratio is the first indicator to be looked at. Taking into account the level of financial liberalization of the country, as well as its attractiveness to foreign investment makes it possible to size up the potential impact of external constraints on national wealth. The easiest method consists in calculating the ratio of the cumulated stock of external claims and liabilities to the gross domestic product (GDP) of a country, as shown in graph 1. The financial openness ratio is then expressed as follows

$$\text{Financial Openness Ratio}_{i,t} = \frac{\sum_{j \neq i} (A_{i,j,t} + A_{j,i,t})}{GDP_{i,t}}$$

where  $A_{i,j,t}$  represents the assets of country  $i$  owned in country  $j$  at the end of period  $t$

Although this indicator or its variants are widely used among economists for comparing levels of financial openness among different countries, it does have some shortcomings. First, it compares asset stocks with flows, with GDP being used as a denominator to control for the relative sizes of countries in international comparisons. Second, unless the capital-output ratio is the same in all countries, the above ratio does not provide an adequate measurement of the actual financial openness of a country compared to another, or of the penetration of foreign capital in the economy. Intertemporal comparisons may also be biased if the capital-output ratio were to move significantly over time.<sup>11</sup> A better denominator may therefore be the total stock of domestic financial assets or capital.

In addition to this overall measurement, detailed IIP statistics are useful for assessing potential risks associated with financial openness. These depend on both the breakdown of assets and liabilities by counterpart countries (risk of contagion) and the structure of the IIP itself.

## Usefulness of geographical breakdowns

Geographical breakdowns of assets and liabilities recorded in the IIP are useful to analyze the risk of contagion. For creditor countries, it is a prerequisite to calculate their full exposition toward a country with high risk of default. For debtor countries, it gives indications on their dependency vis-à-vis specific countries. Geographical breakdowns are however rarely available for all the items included in the IIP.

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<sup>11</sup> This point is raised in Obstfeld and Taylor (2002).

## Analysis of the structure of the IIP

IIP statistics allow the analysis of both gross and net figures. As regards gross figures, calculating the ratio of the external debt, on the one hand, and of other liabilities, on the other hand, to the sum of liabilities reported in the IIP, makes it possible to obtain an idea of the capacity of a given country to attract “stable” financing (direct investment and equity portfolio investment) in comparison to fixed-term debt. As explained before, the IIP liabilities can indeed be split up in the following way :

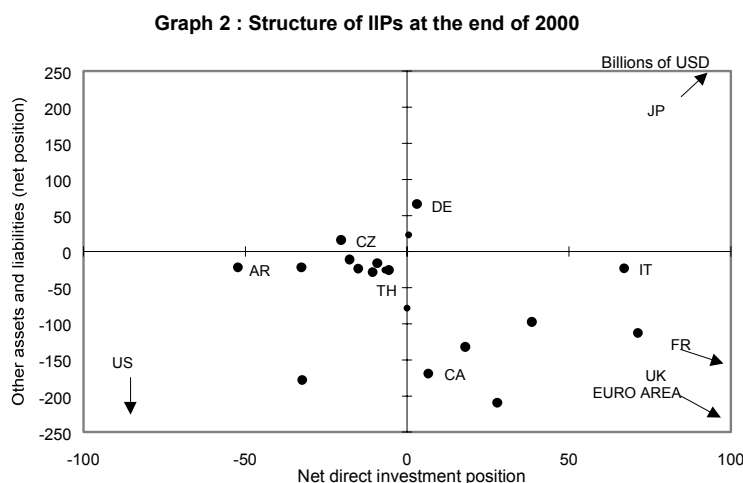
$$\begin{aligned} \text{IIP liabilities} = & \text{External debt} \\ & + \text{Inward direct investment in equity capital and reinvested earnings} \\ & + \text{Portfolio investment in domestic equities} \\ & (+ \text{Liabilities relating to financial derivatives which can be overlooked}) \end{aligned}$$

Chang-Velasco (1996) and Frankel-Rose (1996) showed that the smaller the amount of direct investment received in proportion to external debt, the higher the risk of a foreign exchange crisis. This ratio must however be considered together with other indicators related to the financial stability of a country and especially the size of the current account deficit.

When analyzing the structure of the net IIP, it is useful to distinguish between the net direct investment position, which in principle represents the non liquid part of the IIP<sup>12</sup>, and the net position for other components of the IIP.

From graph 2, it is possible to discriminate between countries according to the signs of their positions, i.e. whether or not both show the same sign.

As regards developed countries, the euro area as well as France and the United Kingdom register a positive balance for direct investment which is offset by net liabilities vis-à-vis the rest of the world for other components of the position. This pattern is different from that of the United States or Japan where both sub-positions are of the same sign, negative in the case of the US, positive in the case of Japan.



Source : IMF, *International Financial Statistics*

Regarding other countries, direct investment liabilities are offset by net other assets in the Czech Republic, whereas in Argentina and in Thailand, direct investment and other net liabilities both contribute to financing the domestic economy.

<sup>12</sup> To be rigorous, inter-company transactions such as loans and deposits should be excluded from direct investment so that only equity capital and reinvested earnings are taken into account. This distinction is available in the *Balance of Payments Statistics Yearbook* published by the IMF.

It is also interesting to compare gross external debt to available external assets. The usual assessment of the risk of a liquidity crunch, partly formalized by the IMF (2000), consists in comparing short-term debt and borrowing requirements corresponding to forecasts of the current account balance with available foreign reserve assets.

Finally, the analysis of debt sustainability through the IIP can be supplemented by the assessment of the impact of flows of financial revenues on the equilibrium of the BOP current account. External debt is traditionally considered as sustainable when the ratio debt/GDP has a finite limit. On an intertemporal basis, the steady-state trade balance can then be expressed with the following equation (Lane and Milesi-Ferretti, 2001) :

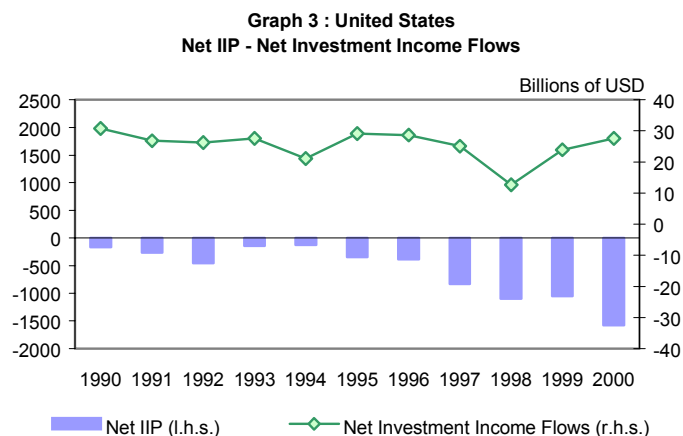
$$tb = r' \times b$$

where  $tb$  is the trade balance to GDP ratio,  $r'$  the rate of return on external assets and liabilities and  $b$  the net stock of the IIP as a ratio to GDP. This means that a country can run a steady-state trade deficit equal to the income flow on its net foreign asset position or, conversely, that a country with net external liabilities must run a trade surplus equal to the net income flow paid up to the rest of the world in order to stabilize its external debt broadly assessed through the net IIP.<sup>13</sup>

A prospective analysis is however very difficult to implement. Calculating the income flows implies assessing future rates of return for the different categories of assets and liabilities. In the case of direct and portfolio investments in equities, the rates of return will depend essentially on the GDP growth rate which is hard to predict on a medium to long term basis.

The case of the United States is interesting, since it still records net positive income flows, whereas its net IIP has been increasingly negative since 1989. This reflects an average return on external assets in the US IIP substantially higher than the average cost of external liabilities. A simple calculation based on data for 2000 shows that the average return on US external assets is one percentage point higher than the return on external liabilities.<sup>14</sup> Thus, the imbalance in the US IIP has had so far no direct impact on the US current account and hence no effect on the dollar exchange rate.

This last point directly raises the issue of the link between the IIP and variables of interest for monetary policy, starting with the exchange rate.



<sup>13</sup> To makes things simpler, we overlook other components of the current and capital accounts, like the compensation of employees and current transfers.

<sup>14</sup> The main explanation lies in the weak return on inward direct investment stocks.

## 3.2. The IIP and monetary policy

The financial openness observed via the IIP largely affects the conduct of the monetary policy in its domestic framework. In practice, there is a bijective relationship between monetary policy which exerts an impact on the IIP via inferred changes in the value of external claims and liabilities, and the IIP which may influence key indicators, such as monetary aggregates and the exchange rate via *inter alia* the impact on net income earned from abroad (or paid to the rest of the world) by resident economic agents.

The strength of these relationships progressively increases as financial openness rates rise as a result of the explosion of direct and portfolio investment flows. This phenomenon must be assessed by taking into account the size of the respective net positions of the various sectors (i.e. monetary authorities and banks, general government, and other sectors). The behavior of economic agents and the wealth effects inferred by a change in their external financial assets may indeed prove to be very different.

Central banks are almost unaffected by a capital loss on reserve assets, inasmuch as, theoretically, they are not managed for profits. Similarly, commercial banks usually hedge part of the risks on external claims and liabilities. Not only do they not take foreign exchange positions, but, in general, they also limit their interest rate risks on portfolio debt securities. Besides, they make little investment in equities and their share in total direct investment flows is usually relatively small. Thus, wealth effects are concentrated on the non-banking sector, whose external assets or liabilities are generally not hedged. Therefore, we should assess the net composition, broken down by sectors, as an analysis of the overall stocks may be over-simplistic.

The usefulness of a sectoral breakdown can be illustrated by the Japanese IIP which at the end of 2000 showed a significant positive net balance of USD 1157.9 billion, or 25 % of GDP. The breakdown by major sectors was as follows :

Central bank (reserve assets) :	USD 361.0 bn
Banking sector <sup>15</sup> :	USD 637.2 bn
Others :	USD 159.7 bn

On the whole, non-banks only hold 14 % of the Japanese IIP surplus. Indeed, though Japanese households have a particularly high saving rate, they mainly invest on their domestic market in spite of the weak return on yen denominated securities or deposits. Consequently, the external surplus of Japan is invested abroad via the banking system and the central bank. Wealth effects may then be more limited than could have been thought by looking only at aggregated figures.

A currency breakdown of external claims and liabilities, or at least a distinction between local and foreign currencies, is essential for an in-depth analysis of investors' behavior, as well as in assessing the vulnerability of an economy to foreign exchange variations. Though the provision of this component is encouraged by the IMF, national publications rarely give this information. Only partial information can be obtained, through the BIS statistics regarding the external position of reporting countries' banking sectors.<sup>16</sup>

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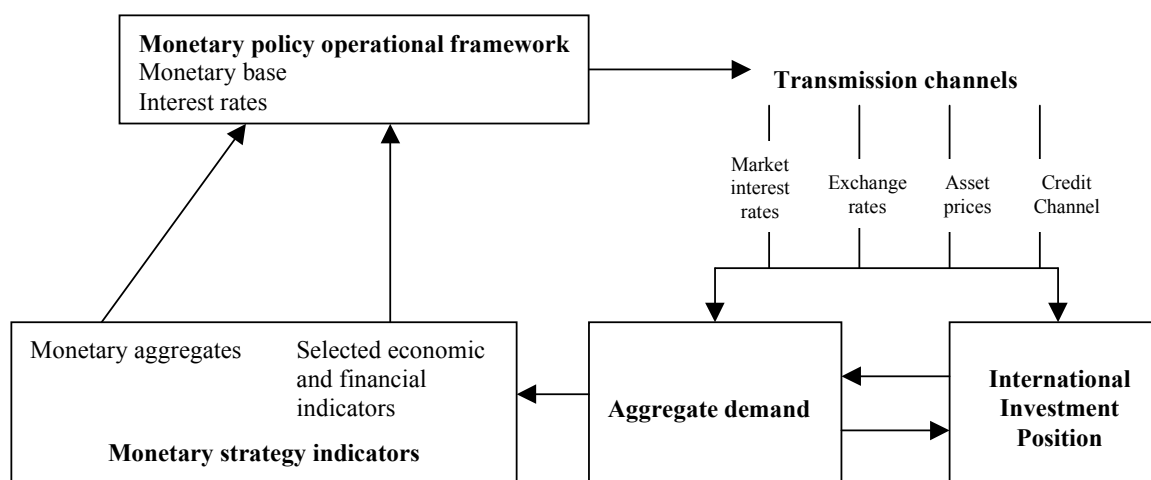
<sup>15</sup> Data found in the BIS international banking statistics.

<sup>16</sup> This breakdown is sent by the BIS to the reporting central banks only.

One easy way to analyze the links between the IIP and monetary policy is to refer to monetary policy transmission channels. Economic theory usually distinguishes four channels :

- exchange rates ;
- interest rates ;
- the credit channel through banks' reactions to liquidity injections or interest rates variations, or in a broader sense, the impact of monetary policy measures on the net worth of borrowers ;
- wealth effects relating to asset price variations.

**Figure 3 : Stylized representation of the interactions between monetary policy and the IIP**



## The exchange rate channel

The impact of a country's net foreign asset position (its IIP) and its exchange rate has been covered through extended economic research. Lane and Milesi-Ferretti (2002) show that net foreign asset positions influence long-term real exchange rates, defined in terms of consumer prices, through their impact on current accounts. Larger liabilities lead indeed to higher net payments – interests or dividends – to the rest of the world, which must be financed by a trade surplus in equilibrium. This normally requires a lower currency valuation. Hence a negative long-run relation between the trade balance and the real exchange rate when controlling for other determinants.

Conversely, the exchange rate has also an impact on the net IIP. Indeed, other things being equal, any depreciation of the national currency will increase the share of external assets and liabilities denominated in foreign currencies compared to national wealth (immediate impact). This change in the value of external assets and liabilities may then induce changes in the behavior of economic agents, which in turn affect the IIP (delayed impact). Expectations of local currency depreciation may for instance, encourage economic agents to raise the share of their assets denominated in foreign currency and vice-versa.

Estimates made on the French IIP make it possible to assess the size of the immediate impact. Thanks to the positive position in direct investment and portfolio investment stocks, the French IIP is long in foreign currency and short in euro assets. This implies that any depreciation of the euro would tend to boost the net external position. That is what occurred in 1999 et 2000 with the fall of the euro against the dollar. All other things being equal, the French net asset position would indeed have improved by 59% between 1999 and 2000, while the euro was loosing 7,3 % against the US dollar.

It is necessary to have a detailed currency breakdown of assets and liabilities forming the IIP (at least a split between foreign and domestic currency denominated stocks) to estimate the delayed impact of the exchange rate channel. Moreover, it is important to assess the volume of hedging operations on foreign exchange positions vis-à-vis other countries initiated by local agents (either via spot transactions or via derivatives). While hedging can considerably affect the extent of the wealth effect related to an exchange rate variation, a study of the IIP alone gives only an approximate idea of the extent of this impact. However, it can be assumed that the hedging of foreign positions is primarily performed by banks.

Another difficulty lies in assessing the impact of foreign exchange fluctuations on the different types of underlying instruments. The wealth effect generated for economic agents will depend on the investment outlook. It can therefore be posited that the more short-term the investment, the greater the impact of a foreign exchange loss. Conversely, direct investment will remain largely unaffected by short-term variations of the exchange rate.

## The interest rate channel

The net IIP can also influence interest rates. This is mainly the case in emerging countries or in any fixed exchange rate system. A country recording large net liabilities and a current account deficit may indeed need to increase the yield on inward investments by raising its interest rates in order to attract foreign financing and avoid a liquidity crisis. While entailing an immediate increase in the deficit on income,<sup>17</sup> this rise in interest rates should ultimately lead to a contraction of domestic demand that reduces the trade deficit and eventually tends to restore the current account equilibrium.

In turn, like exchange rates, interest rates have both an immediate and a delayed impact on the IIP. Monetary policy may be more concerned by the impact of short-term rates over which central banks theoretically have absolute control. Besides, the effects are much less predictable on long-term maturities, as economic agents' expectations, depending on the credibility of the central bank and on fiscal policy, may impede the stance of monetary policy.

As regards the immediate impact, the market value of investments in quoted debt securities is affected in a very classical way by changes in interest rates. An increase in interest rates is expected to lead to a reduction in the market value of both equity securities (by lowering the present value of discounted future corporate profits) and bonds (following the traditional reverse relationship between bonds' prices and interest rates).

Indirectly, portfolio investments in debt securities could also be affected by arbitrage between equities and fixed-income securities following changes in stock market indices.

Effects may stem from either a change in domestic rates, or an adjustment of foreign interest rates. This brings us back to the problem of the currency breakdown of claims and liabilities included in the IIP. Hedging of interest rate positions can also change the analysis. However just as for the exchange rate channel these transactions mainly involve banks.

## The credit channel effect

As regards the credit channel, it is useful to analyze the impact of monetary policy on the IIP for the banking sector, above and beyond effects strictly related to exchange or interest rate variations. Indeed, changes in monetary conditions applied to their domestic market will have an influence on

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<sup>17</sup> The impact mainly concerns index linked securities (bonds or credits) and short-term investments whenever they are rolled over.

domestic banks' activities abroad. Thus, a slowdown in credit demand from residents may encourage banks to increase the granting of loans to non-residents and vice-versa.

Above all, the extent of these reactions depends on local banks' ability to expand their operations abroad. They may be discouraged from doing so by internal problems relating to the weakness of their capital structure (Japanese banks provide today a clear example of such a phenomenon) or their risk aversion. Finally, as banks are more and more multinational, they tend to expand their activity vis-à-vis non-residents via subsidiaries and branches abroad without any flow being recorded in the BOP (and following without any stock in the IIP), except for possible cross-border inter-company transactions.

## Wealth effects linked to asset prices variations

The last channel usually identified in economic theory is that of wealth effects linked to asset price variations, be they securities or real estate. These effects are not easy to analyze as they may lead to opposite behaviors. Negative wealth effects may for instance encourage economic agents, either to take their loss and carry out disinvestments, or to make new purchases (in order to keep the same balance in the composition of portfolios, or because of expectations of an imminent market recovery, etc).

As pointed out before, other sectors – households and companies – are first concerned by wealth effects. Faced with a loss in the value of their investment abroad, companies may thus limit their future investment because of a decrease in their borrowing capacity, while households may either increase their saving rate to rebuild their wealth or, on the contrary, reduce their savings to maintain their consumption.

These mechanisms are identical to those observed for domestic assets and liabilities, except that foreign assets and liabilities can create more violent wealth effects, given the impact of exchange rates in the short run and increasingly of “herd behavior”. Thus, the greater the volume of external assets and liabilities compared to the overall financial assets of non-banks, the more significant the reactions will be. Obviously, such a reaction only applies to few companies and households, even in the most open economies. This is particularly the case for multinational companies because of their direct investment abroad, or for households with a large part of their savings invested in foreign shares. But the extent of the spill-over caused by these economic agents to the whole domestic economy would then remain to be determined.

To conclude on the links between the IIP and monetary policy transmission channels, we can refer to the structure of the IIP as analyzed in sub-section 3.1. According to graph 2, four main types of external position can be identified, each raising very different problems for central banks.

Japan typifies the first case. The net IIP is positive thanks both to direct investment and other external stocks. In such a context, risks arise primarily from an appreciation of the yen, which would reduce the value of foreign currency denominated assets, and in addition from a cut in foreign interest rates or a fall in foreign stock market indices. This may be one of the justifications of the interventions of the Bank of Japan to avoid any overvaluation of the yen.

The US is an example of the opposite case, with a negative position due both to direct investment and other financial stocks. In theory, major risks here would come from a depreciation of the dollar and a rise in foreign interest rates. However, this should be viewed against the fact that, thanks to the dollar's status as the main international reserve currency, a large part of the US external debt is denominated in dollars. Moreover, while a decline in the dollar exchange rate has a negative impact on the net IIP, it subsequently results in a reduction in the US borrowing requirement vis-à-vis the rest of the world, via the improvement of the current account balance.



The third case applies to the euro area, where the overall balanced IIP reflects direct investment abroad financed by foreign currency denominated loans recorded in other liabilities. The main risks are twofold : a fall in foreign stock market indices leading to a decline in the value of external assets and a rise in interest rates abroad, which would result in higher borrowing costs.

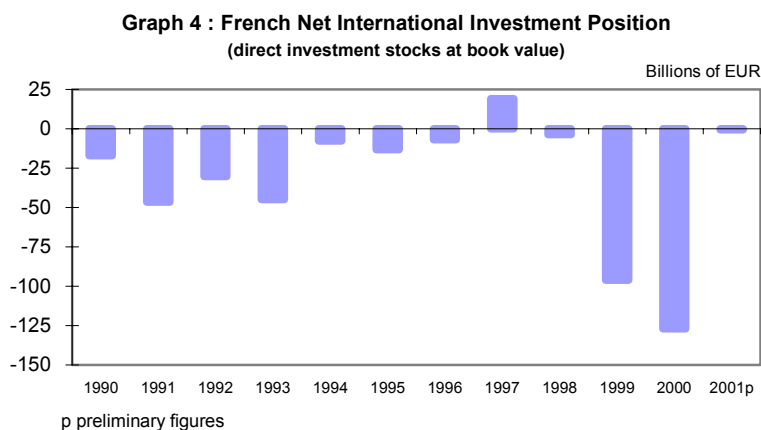
Apart from the Czech Republic, there is currently no clear illustration of the last case : an overall balanced IIP position reflecting inward direct investment, offset by net other external assets. In this case, risks vary according to the currency of denomination of these net external assets. If they are denominated in foreign currencies, the country faces a foreign exchange risk. If they are denominated in the domestic currency, the risk relates to possible diverging developments in the value of assets on the one hand and liabilities on the other hand, should the yield on inward direct investment rise faster than the yield on net external assets.

### 3.3. The French IIP

The Bank of France has published an IIP on a yearly basis since 1989. Data for direct investment stocks have been available at book value from this date and at market value since 1994 (the latter information is released in the *IFS review*). The creation of this aggregate, prior to the *Fifth Manual* of the IMF, coincided with the complete dismantling of capital controls in France enforced by the decree dated December 29, 1989 which anticipated the complete liberalization of capital flows within the European Union by July 1, 1990.

During the 1990s, France registered the fastest growth rate among the G5 countries of stocks of external assets and liabilities. It now has the second highest financial openness ratio after the United Kingdom (graph 1). This trend is mainly due to the sharp increase in direct investment stocks (both assets and liabilities).

Developments in the French net IIP during the 1990s have been largely disconnected from those of the balance of payments current account. Despite a current account surplus from 1992, the French net IIP was constantly negative up to 1996. After turning positive during a single year in 1997, it became negative again from 1998 onwards. Preliminary figures for 2001 show a close-to-zero net position. Revaluation effects thus played a great role in these variations.



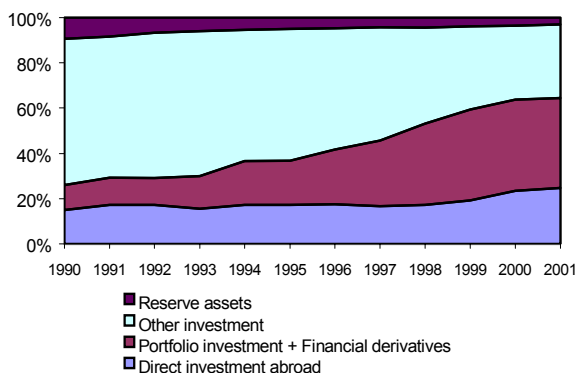
Source: Banque de France

This overall trend shows a constantly positive position for net direct investment stocks, which sharply increased over the recent years.

The share of long-term assets and liabilities continuously increased throughout the period. Direct investment stocks (at book value) which accounted for just 15 % of the total outstanding amount of

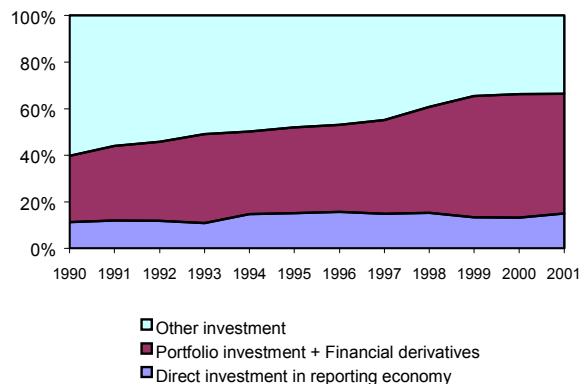
external claims in 1990, reached 25 % in 2001 ; likewise, it rose from 11 % to 15 % of liabilities. As far as portfolio investment is concerned, its share rose from 11% to 34 % of claims and from 28% to 46 % of liabilities for the same period.

**Graph 5 : French IIP - Assets**



Source: Banque de France

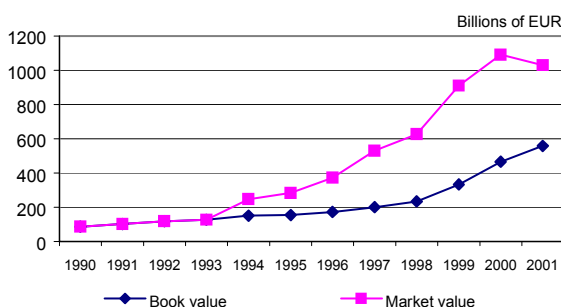
**Graph 6 : French IIP - Liabilities**



Source : Banque de France

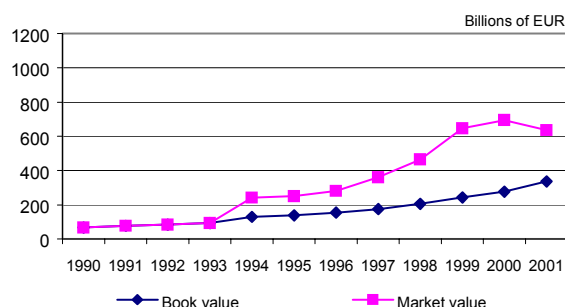
The spectacular expansion in the French stock of direct investment abroad and foreign stock of direct investment in France is mainly the result of flows reported in the balance of payments, which dramatically increased following the internationalization process of French companies. However, valuation effects are particularly large as French and foreign stock indices rocketed until 2000. Indeed, the difference between estimates of direct investment stocks at their book value and at their market value shows that more than half of the rise in stocks that has occurred since 1990, for both claims and liabilities, is related to valuation effects.

**Graph 7 : French stocks of direct investment abroad**



Source: Banque de France

**Graph 8 : French stocks of direct investment in France**



Source: Banque de France

The same causes have the same effects on portfolio investment ; stocks of portfolio investment benefited from both the growth of flows and revaluation effects due to the rise in stock indices and declining interest rates in the 1990's. Besides, the structure of portfolio investment shows a clear distinction between equities and debt securities on the assets side and on the liabilities side. French investors favor debt securities, which accounted for 76 % of their portfolio at the end of 2001 (compared to 50 % in 1990). Non-resident investors hold a somewhat larger share of equities, representing 43 % of their portfolio of French securities at the end of 2001, compared to 25 % in 1990.

The difference in types of investors may explain this distinction. As far as French residents are concerned, banks are the main investors and they favor debt securities transactions, which entail a much less significant risk of capital loss. As far as non-residents are concerned, the share of non-bank investors is much higher, especially American or British pension funds in search of profitable long-term investments, which favor equities.

Looking at the impact of the speculative attacks against the French franc in the early 1990s on the IIP shows both the usefulness and the limits of the IIP as an analysis tool for central banks.

It can be seen that speculative assaults were not caused by the state of the French IIP, as it showed a slightly negative balance which could not have raised anticipations of a possible debt crisis. This was emphasized by monetary authorities in their communications vis-à-vis financial markets during the crisis.

The external liabilities were a major factor in the French monetary authorities' decision to maintain the franc's external value. A devaluation would have caused a loss of confidence among non-residents who would then have asked for an additional premium for any new investment denominated in francs. Gains obtained through an easing of monetary policy would have been probably offset by a rise in long-term rates and a decline in French equity prices.

However, the 1992 and 1993 IIPs only reflect to a limited extent the speculative crises that affected the French franc during both years. It is true that, at the end of each of these years, the situation was nearly back to normal, as foreign exchange reserves had been rebuilt to a level close to that prior to the crisis. Due to the very short period of crisis (a few weeks at most), it is almost impossible for the IIP to reflect, even retrospectively, the extent of the tensions, as far as the closing date does not fall in the period of speculative assaults.<sup>18</sup>

The form of speculative attacks observed during this period presents an additional problem. Besides using usual mechanisms (i.e. term loan and spot sale of the currency expected to depreciate), speculators partly resorted to derivative instruments offering a leverage effect. In the case of France, a significant part of the speculative positions in 1992 and 1993 took the form of purchases of 3-month PIBOR contracts. Speculators expected a rise in the price of the contract following a fall of short-term rates which would have been coupled with the devaluation of the franc ( $P_t = 100 - i_t$  where  $P_t$  is the price at time  $t$  and  $i_t$  is the 3-months interest rate at time  $t$ ).<sup>19</sup> This type of transactions initiated by non-residents only appears in the IIP for guarantee deposits made on the purchase of the contract. However these deposits only represent a minor part of the total amount of the position.

Crises experienced by the French franc during this period nevertheless had a delayed impact on the composition of France's IIP via the outstanding amounts of debt securities held by non-residents.

Reforms in the functioning of the public debt market in the mid 1980's were accompanied by growing investment in French government securities (bonds, bills and notes) by non-residents. Thus, the holding ratio of the French marketable government debt by non residents increased from 3 % at the end of 1987 to over 35 % at the end of 1992 (Patat, 1994). In addition to making easier the financing of France's public deficit, which strongly increased during this period, this process contributed to enhancing the international use of the French currency.

After stabilizing at that level in 1992 and 1993, a downward trend began in 1994, as the holding ratio fell to 14 % at the end of 1996. This turnaround can partly be attributed to the failure of speculative assaults affecting the French franc in 1992 and 1993.<sup>20</sup> Until that time, non-resident investors had

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<sup>18</sup> Because of the fixed exchange rate policy implemented within the EMS, it was nevertheless necessary for the French monetary authorities to have at their disposal an instrument for monitoring speculative positions within very short delays. As the IIP does not obviously present this feature, the external monetary position of resident banks was used. It covered the whole external assets and liabilities in loans and deposits of French resident banks, broken down into francs and foreign currencies, as well as into short and long term.

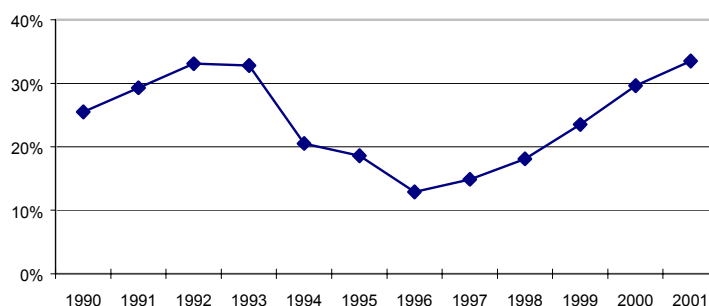
This weekly monetary position, based on a survey of major French banks and providing results with a one-week delay, made it possible to monitor non-residents' behavior, especially regarding the amount of their short-term loans in francs.

<sup>19</sup> Such a strategy was pursued not only for speculative purposes but also for hedging portfolios of French franc fixed-income securities.

<sup>20</sup> The 1994 bond crisis that affected all major industrialized countries also probably played a role.

registered significant capital gains due to the constant reduction of spreads between French franc and Deutsche mark interest rates. A number of these investors following short-term strategies had expected additional gains on their portfolios of fixed-rate securities due to a further decline in French interest rates after a devaluation, which would have reduced them below the level of German interest rates. Therefore the holding of the Franc parity led non resident investors to reduce their French debt security positions. In principle, such a phenomenon did not have any impact on the French net IIP because the French franc denominated loans granted to the non-residents for financing the purchase of French debt securities were simultaneously paid back. Only its composition was affected. From 1997 onwards, the holding ratio of French marketable government debt instruments by non residents has been rising again with the prospect of Monetary Union and declining European interest rates, which has definitively restored investors' confidence.

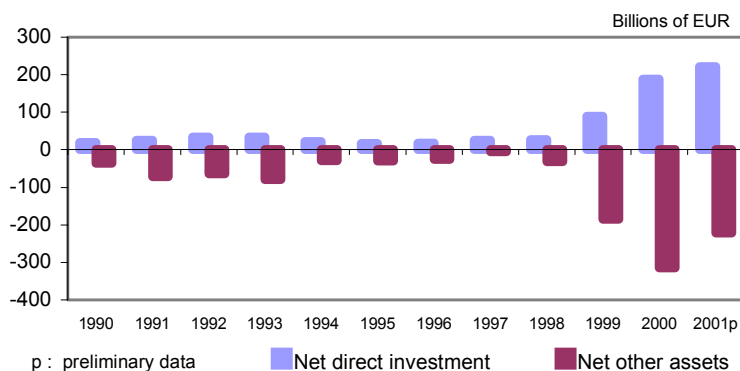
**Graph 9 : Holding ratio of French tradable government debt by non-residents**



Source : Banque de France

In recent years, the global balance of the French IIP showed diverging trends between the net direct investment stocks and the net position for the other assets and liabilities. While the figures for the net direct investment stocks were increasingly positive because of the growing number of transactions by French companies, the net position for the other assets and liabilities became increasingly negative. These two phenomena can be partly related. The outflows of direct investment have been financed by a growing debt in foreign currency, either in the form of securities issued by investors, or via the resident banks borrowing from their non-resident correspondents.

**Graph 10: French International Investment Position  
Net Direct Investment Stocks and Net Other Assets**



Source : Banque de France

Thus, the composition of the French IIP illustrates the classical maturity mismatch risk borne by French resident companies, like many other large Western companies, pursuing leverage strategies aimed at increasing the return on equity, with direct investment financed by short-term loans.

## 4. Conclusion : the need to improve the availability and quality of the IIP

The theoretical value of the IIP lies in the complexity of international financial relations. However, the numerous practical difficulties in compiling it, and to some extent, the lack of detail (e.g. currency breakdown) explains why it is so hard to use the IIP for analytical purposes.

Analyzing the IIP makes it possible to better understand *ex post* the origins and development of financial crises, caused by insufficient monitoring of financial openness, or unsustainable debt levels. The question remains open whether this aggregate can be used *ex ante* as an indicator for the implementation of corrective measures.

Practical experience suggests that the IIP is more useful for backward-looking analysis to better understand past events, than for making forecasts or for the implementation of economic and monetary decisions. While this is the case for most statistical aggregates, it is even more so for the IIP because of particularly long computation lags and low data frequency. Indeed, contrary to the balance of payments, the IIP has not been included in the panel of indicators monitored by the Eurosystem for the conduct of its monetary policy.

It is clear that expected or effective actions by monetary authorities do have an effect on external investment behavior of economic agents, as well as on the value of their net external assets. However these effects on the IIP are all the harder to estimate as a large number of parameters need to be taken into account.

- The impact of monetary policy measures will concern gross stocks of claims and liabilities which most of the time are far more substantial than the net balance of the IIP. Therefore it is particularly difficult to foresee the trend on the net IIP.
- Moreover, the impact has to be differentiated according to the maturity and liquidity of the investments concerned. Indeed, short-term deposits abroad can rapidly be shifted in reaction to monetary policy decisions while this is almost impossible in the case of direct investment in equity capital.
- Finally, impacts will be differently felt according to the type of economic agent. Normally, monetary authorities and general government are largely unaffected by wealth effects. As far as banks are concerned, they often have the means to hedge against risks related to their investments or their external debt. Impact is concentrated on other sectors comprising households and companies.

If the objective were to set the IIP among operational indicators followed by monetary authorities, a large number of conditions would have to be met.

- Time and periodicity requirements should be dealt with first. The publishing of a quarterly IIP - an aim encouraged by the IMF - would be highly desirable. Besides, it is essential to reduce publishing lags to less than a quarter after the end of the reference period, as is planned today for external debt aggregates in the SDDS.
- The comparability between aggregates provided by the different countries needs to be enhanced. Statistics on the IIP published by the IMF in its *International Financial Statistics review* cover important methodological gaps which greatly limit their possible use.

In particular, if some countries are able to report their investment stocks at market value, a majority of them continue to report them at book value. In general, reporting countries should give more information about the valuation indices used for direct and portfolio investments (the so-called “metadata”).

- Currency breakdowns, rarely available, are essential for estimating wealth effects. Geographical breakdowns, at least for main counterpart countries, would also be of great analytical interest. Moreover it seems highly desirable that IIP data be supplemented by information concerning positions on derivatives as recommended for the elaboration of external debt aggregates.

It must be emphasized that the various statistics on external stocks compiled by international organizations (e.g. BIS international banking statistics on a locational basis, or results of the *coordinated portfolio investment survey* conducted under the aegis of the IMF, to the extent that a majority of countries will participate) can be very helpful in the elaboration of national IIPs or for cross-checking purposes.

Hence the need for continuing efforts of harmonization. The international statistical community which has made substantial efforts to improve external debt aggregates over the past years, could make the IIP its new target for transparency in financial statistics by promoting the effective and consistent implementation of internationally agreed standards.

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