

## Financial exclusion and the emergence of non-bank liquidity\*

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### I. Introduction: The slippery notion of liquidity

The depiction of an economy's liquidity is the total of available tools for undertaking transactions in the present and meeting financial obligations arising from the past.

The available tools for each financial entity (households, businesses, public sector) comprise cash surpluses generated from current activity, liquidation of accumulated values and loans or other forms of financing. Cash surpluses are generated by current transactions. But liquidation of values and borrowing are necessarily performed through transactions in money, capital or other markets. Therefore, money and capital markets' conditions are a key factor in indentifying liquidity and its fluctuation.

In classical monetary analysis, liquidity is closely related with the concept of money supply. In classical financial analysis the concept of liquidity is different: it is related with the active presence of potential buyers of assets (securities, promissory notes, insurance obligations, etc.). The two concepts do not coincide. The first includes the *necessary* condition for the existence of liquidity which can technically be affected by the central bank. The second includes the *sufficient* condition for the activation of liquidity (originally provided by money supply) and which is based on the relationship between buyers and sellers of assets. This relationship involves expectations and the ability to provide safety of liquidation.

The current global crisis has clearly highlighted the gap between these two concepts. The increase of "exogenous" money supply from central banks does not automatically engender increased active demand for securities, promissory notes and other assets. The reason is simple: potential buyers of securities prefer to maintain their liquidity in an inactive form, instead of proceeding to purchases. Liquidity holding by households, businesses and banks is a self-insurance option against fu-

ture (and largely imponderable) risks. We may therefore have "liquidity" in the monetary sense without having active liquidity in the economy and the capital markets.

The old (but timely) formulation of Keynes in his *General Theory* reveals what I call the "self-referential nature of liquidity": securities' buyers act in the belief that there will also be active buyers in the future, so that today's purchases can easily turn to tomorrow's sales. Current liquidity supply only exists through the conventional acceptance that willing liquidity suppliers will also exist tomorrow. Should this "convention" break, a confidence crisis would arise leading to the self-cancellation of liquidity.<sup>1</sup> Active liquidity is therefore a self-referential and imponderable concept.

Since the first manifestation of the crisis in 2008, we have seen examples of confidence issues that led to market freezing, i.e. self-cancellation of liquidity. The liquidity crisis in the international monetary system, which started in 2008, highlighted nevertheless the state's essential role as "external" liquidity supplier, i.e. liquidity not endogenously generated by the economy's transactions. This was made possible through extraordinary public expenditure and monetary injections that increased central bank assets, especially in the USA. In Greece, however, this role does not exist. The state is heavily indebted, and therefore does not have autonomous instruments to undertake fiscal expansion, and, on the other hand, the monetary authority is European. Thus, the supply of "external liquidity" in Greece is at least complicated, inflexible and *ad hoc*.

### II. The Greek impasse: The delayed "discovery" of liquidity

When the budgetary impasse was revealed in 2010, the combination of high debt and high fiscal deficit necessitated strict measures to restore balance. The general context of these actions, sadly, was not an act of self-consciousness and foresight of our society. It was the result of a great coercion in which the country was trapped without the social conscience that we were heading to a dead-end: the Greek public sector's exclusion from the markets, namely refusal of financing from the market.

The illusion that everything went well was in large part due to the functioning of the international credit market through the period 2001-8, which was characterized by

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1. John Maynard Keynes, *The General Theory of Employment, Interest and Money*, Ch. 12 (Classic Books of America 2009).

very high liquidity and a climate of financial euphoria. In this climate, the international market failed to transmit signals to Greece regarding the upcoming impasse. On the contrary, the easy financing of Public Debt caused over-liquidity to spread within the Greek economy.

Financing the Greek debt with German rates was an implicit international subsidy to the Greek government, which continued until 2008 despite the fact that even then Greek fiscal data had deteriorated. Clearly the famous “market discipline” failed to prevent the Greek tendency to overborrowing. To the contrary, markets encouraged it. The joint lack of discipline of markets and government finally led Greece to an abrupt financial embargo, from which the economy now suffers.

Financial exclusion simply meant that the public sector suddenly lost the usual instruments employed for many years to fulfill its growing obligations, i.e. an unprecedented public sector liquidity crisis. The two memoranda were constituted on an emergency funding of the government by public international institutions in the face of the exclusion from markets, in order to avoid a disorderly bankruptcy that would harm all sides. However the target of the memoranda, particularly the first, and of the policies drawn for fiscal adjustment, did not focus at all on the foreseeable possibility that *public sector's lack of liquidity would soon lead to a liquidity crisis for the whole economy.*

The Greek economy's liquidity was left to be determined as a residual item of other economic policy and fiscal adjustment choices. As the recession deepened, especially during 2011, everybody started to realize that the lack of liquidity spread to businesses, households and banks. The particular importance of this observation is attributed to the fact that businesses and households having long-term solvency are forced into distress due to an inability to find available cash in order to meet immediate obligations. This deepens the recession but also destroys the productive tissue.

Liquidity shortage is a common denominator in all financial crises: gradual crises, panic crises, private, banking or public crises. The fact that liquidity was not a key political objective in Greece is a major omission. *Liquidity contraction is a major mechanism for crisis diffusion.* Failing to size up the effects of this mechanism might be partly justified by the fact that the very concept of liquidity is hard to measure and to control, as I will explain.

In this article I will develop, in the first part, the conditions which determine liquidity shortage, taking into consideration the core institutional characteristic of the Eurozone: namely that we operate in a system with *unrestricted capital mobility.*

In the second part, I will present typical indices and calculations of liquidity movement in the Greek economy and of the very significant substitution of bank by non-bank liquidity which occurred in the period 2009-2011.

The article does not seek to be an exhaustive analysis, which would require more detailed information than I have here, but to offer motivation for a targeted study of Greece's recessionary economic conditions from the liquidity point of view in the present and the future.

### III. Determinations of liquidity

In any financial manual, money supply is referred to as the bedrock of liquidity. Central banks' modern monetary practice identifies and monitors M1, M2, M3 quantities as *successive* determinations of available payment instruments. These aggregates are primarily affected by monetary policy. But they are also affected –especially those mentioned as “quasi-money”– by money and capital markets.

As far as Monetary Union is concerned, monetary policy is maintained for the whole Union and not for each member country separately. If therefore a country faces a distinct recession while others don't, it is understandable that the country facing recession cannot determine overall money supply management. In this case, money redistribution (and thus liquidity) appears as the dominant outcome, to the detriment of the recessionary country, exacerbating the original deviation: contraction of the distressed economy and expansion of the others.

This process is triggered by capital movement. Free capital flow does not contract but rather expands cyclical deviations between economies, given the overall money supply. It is not difficult to presume that a distressed economy will suffer significant private capital outflows which will reduce its domestic liquidity, and that this outflow can only be counterbalanced by capital inflows induced by public bodies, effectively borrowing of the public sector or credit expansion via the central bank.

Money supply aggregates –even in the strict M1 definition– do not completely cover the active liquidity condition for three reasons. The first relates to effectiveness of the internal payments system in the economy. The second relates to the functioning of credit and securities markets which govern the ease or difficulty of assets liquidation. The third reason relates to behavior of economic entities in managing the liquidity they acquire. Let us discuss them one by one.

The effectiveness of payment system depends on the ability to minimize the volume of payment instruments required for the processing of a given amount of transactions. The debit/credit entries in a multilateral settle-

ment system lead to a movement of payment instruments only for net and not for the gross amount of transactions. For example, a system where all payments are automatically made through debit/credit entries to bank accounts requires less movement of payment instruments than a system where all transactions are dealt in cash. An economic entity proceeding to X purchases and Y sales, requires payment instruments (X-Y) in a debit/credit clearing system, but (X+Y) in a cash system. Liquidity demand in the form of a natural means of payment (i.e. money) is multiple in the second case and an “accident” (erroneous calculations, delays, mismanagement, misappropriation of funds) can occur more easily. A shortage of liquidity is much more likely in the second case.

The operation of credit and securities markets plays a crucial role in determining liquidity availability, for it offers liquidity substitutes. Traditional banking innovations such as current accounts, credit lines and letters of credit, for example, offer direct access to liquidity if and when unexpected needs arise. Holding of liquid securities is a basic liquidity management tool for businesses which use them instead of cash. In times of stock market euphoria, even the possession of long-term securities (shares or bonds) functions as a liquidity substitute. However, the operation of credit and securities markets is the Achilles heel of a liquidity management system, for the “substitutability” of liquidity by securities can be easily lost.

The behavior of economic entities in terms of liquidity is organized in a specific *institutional context* (access to payment systems and to money and capital markets) but is defined by a fundamental factor: the need for insurance against unexpected payment needs. In other words, holding liquidity (or retaining direct access to liquidity) is a form of insurance. In multiple levels of economic theory this “service” provided by liquidity is matched with the payment of a “liquidity premium”. If we borrow a concept from inventory theory, holding liquidity offers a non-pecuniary “convenience yield” which reflects the value of holding reserves against unforeseen claims (or risks). Capital market institutions allow the retention of substitute forms of liquidity, as I said, and even the buying of coverage for certain risks (insurance policies), which reduces the overall need for liquidity holding.

If the essence of liquidity is to provide insurance, the general increase in uncertainty obviously increases the liquidity preference and the corresponding “convenience yield”. The phenomenon of “flight to safe havens” often observed in capital markets, indicates an increase in liquidity demand. Moving from securities of uncertain liquidation value to others with certain liquidation value is a reflection of liquidity demand, which, if significant,

creates crises in stock and bond markets. If the uncertainty of banks’ ability to fulfill their obligations expands, then the flight to liquidity takes the form of transfers from bank liabilities (e.g. deposits) to primary forms of payment, i.e. cash. If, finally, the uncertainty expands to the instrument of payment itself (cash), flight to liquidity takes the form of storage of natural values (gold, commodities). Therefore, essentially, the expansion of uncertainty always moves the defining line of liquidity from composite substitutes based on financial claims to simpler substitutes and intrinsic values.

In this process we notice that “storage” of payment instruments can lead to negative unintended consequences: the loss of means of payment from society’s current transactions needs. In other words, a “liquidity crisis” may result from the disappearance of substitute forms, and the flight to fundamental forms of storing value. The size of the global financial crisis we are experiencing today ballooned for the exact reason that, during the previous period of euphoria, complex substitutes of liquidity were over-supplied due to the inflated values of capital markets.

#### IV. Liquidity in Greece

The magnitude of liquidity in the Greek economy is measured in three steps, as seen below. At first we observe the evolution of monetary aggregates and the composition of money supply. This is the essential starting point for having a picture of liquidity movement in the economy. As a second step we analyze the distinct relation of three sectors of the economy with the banking system: public sector, private businesses and households. From these relations we gauge the role of each sector as a net lender or borrower in the Greek financial system. Net lenders are entities that remove liquidity from the economy and stock it in banks while, conversely, net borrowers provide liquidity.

As a third step we carry out a measurement of inflows and outflows of liquidity from the banking system. The whole methodology is oriented to the credit system because, in Greece, the distribution of financial resources is managed largely by the banks.

The liquidity source that may not be fully captured by the outflows from the credit system is the net external borrowing of the public sector. To the extent that the Greek government is an autonomous entity which conducts external borrowing, in order to meet its domestic payments, it also operates as a liquidity generator to the domestic economy. If external borrowing triggers initial inflow and subsequent outflow of deposits to and from the domestic banking system, there is a possibility that these two acts could take place in such a short time that

they are not recorded in the end of period figures, especially if the period concerns an entire year. In this case, the liquidity movement from the domestic banking system will be underestimated. I will get back to this matter later.

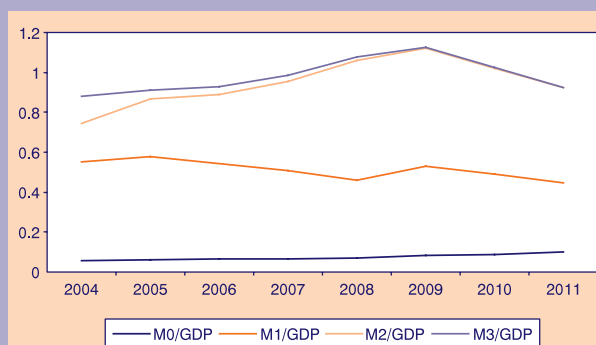
The most important aspect of the descriptive methodology used and of the concomitant analysis is not the general monitoring but the focused observation of changes and upheavals brought about by the great crisis of 2009-2011. The crisis is changing both the structures and behaviors of the economy. Two features of the crisis are *ex ante* factors associated with the demand for liquidity and are expected to bring conflicting results. One result is that the big drop in income leads to a decrease in demand, transactions and, therefore, use of liquidity. And the other is that the crisis deepens uncertainty and is therefore fuelling demand for liquidity as a means of self-insurance. It is therefore important to examine the motion of liquidity in light of these opposing forces.

### A. Monetary aggregates: Rise and fall

The monetary aggregates depict the money supply, i.e. the available liquidity instruments which can be accessed by economic agents, through the banking system. Chart 1 shows the relation of aggregates M0, M1, M2, M3 to GDP. I should note that the size of primary money M0 is not the result of measurement but a quantity extracted by interpolation from the circulation of money in the Eurozone based on Bank of Greece's participation in ECB's capital.<sup>2</sup> The reported size of M0 does not therefore necessarily reflect short-term changes, but must be reflective of the long-term trend. Therefore, we need a more accurate measurement of non-bank liquidity which would reflect the short-term trend. We will develop this in later parts of the article.

The evolution is eloquent and expected. The monetary aggregates showed an increase relative to GDP until 2008 and declined thereafter. The rise before 2009 is due to money components consisting of bank deposits which increased very significantly over the same period. The downturn during the three years of the crisis (2009-2011) is equally due to deposit contraction. However, during the three-year crisis, the narrow measure of (by interpolation) monetary circulation (M0) increased. So, while the deposit component of money supply was de-escalating, the "exogenous" component, even with the imperfect measure-

**CHART 1:**  
**Aggregates and composition of money supply**



Source: Bank of Greece Short-term Statistics Bulletins.

ment of M0, was escalating. The general picture of monetary aggregates suggests two conclusions. First, that money demand declines, as expected, for transaction purposes. But second, that the de-escalation involves a clear disintermediation process which unfolded in the Greek economy during the three years of the crisis: available liquidity instruments held in the banking system decreased significantly and in an hierarchical order. The decline in M2 is large, smaller in M1, while M0 seems to increase.

Therefore, the only monetary aggregate that increases relative to GDP during the years 2009-11 is the (estimated) size of primary money (M0). This finding is consistent with the process of disintermediation and illustrates its general trend.

On this basis of monetary developments, we can construct the actual movements in liquidity aggregates.

### B. Lenders and borrowers: Main sectors of the economy

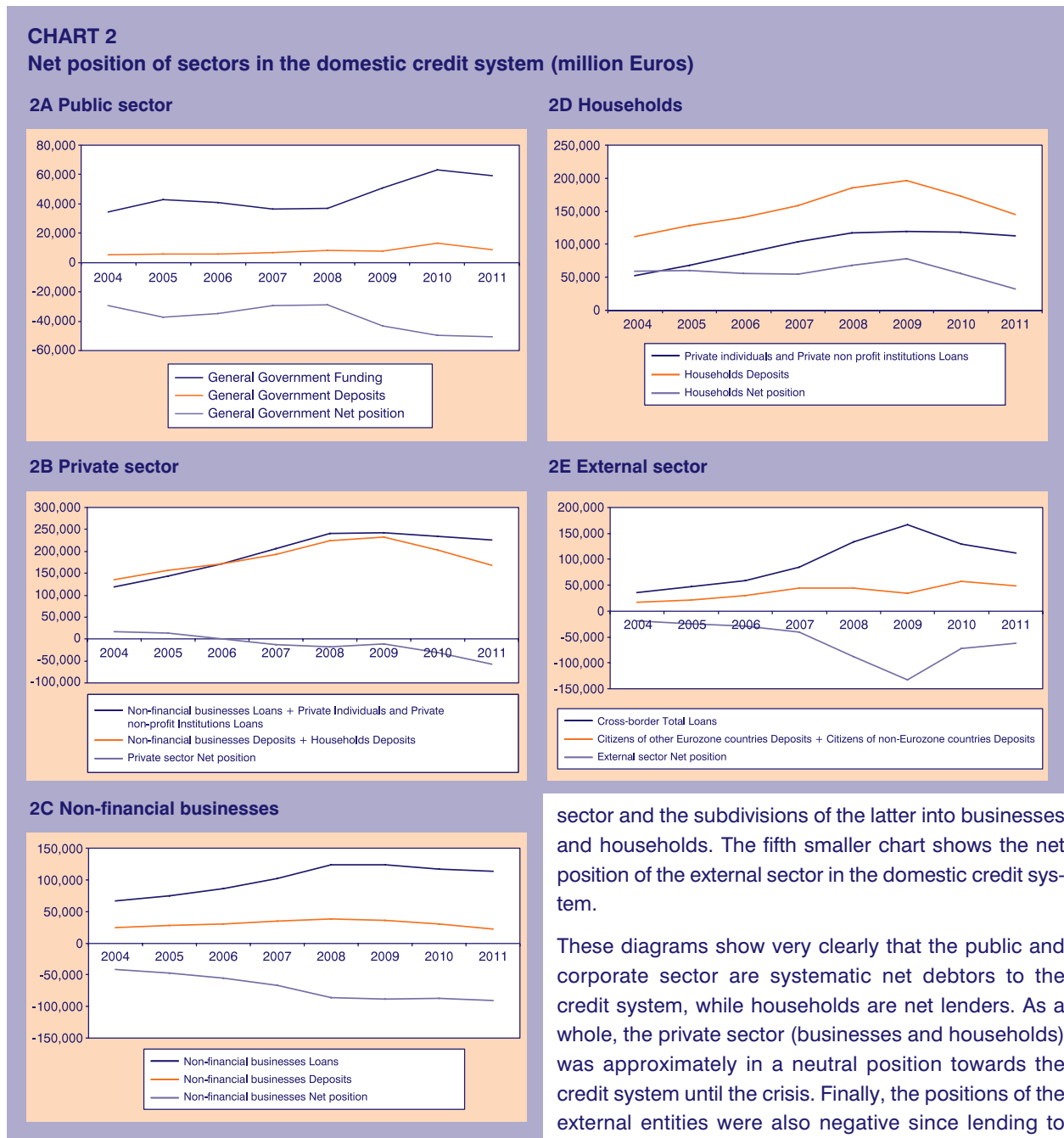
The formation of monetary savings and their transfer to deficit units in the economy determine the internal financial structure of an economy that regulates the central flow of liquidity. In bank-centered systems such as the Greek one, the financial structure is mainly supported by the credit system, i.e. the banks. Traditionally, with small historical exceptions, the role of direct capital markets (stock, bond and derivatives markets) was small in Greece compared with the banks and this applies during the period of accession to the euro.

2. Bank of Greece's relevant explanation notes that "there is a particular element in the calculation of "Greek contribution" to monetary circulation (banknotes and coins in circulation). Since January 2002, when euro banknotes were put into circulation and replaced national banknotes, monetary circulation can be calculated only for the entire Eurozone, and not separately for each country. The Euro system adopted a conventional rule in order to calculate monetary circulation in each member state. According to this rule, Greece's contribution to monetary circulation results from the consideration that the amount of banknotes put into circulation by Bank of Greece is proportional to Greece's contribution key in ECB's share capital, excluding 8% of the issued banknotes allocated to the ECB".

The display of various sectors' net positions versus the domestic banking system is achieved by subtracting claims in the form of deposits from obligations in the form of loans and credit.<sup>3</sup> The presentation is organized into three sectors: the public sector, businesses and households. In the theoretical case where all three sectors have zero net positions, we have a neutral financial structure in which each sector produces endogenously the liquidity it is using. In this theoretical case, financial

institutions (or money markets) would appear, with intrasectoral specialization. The deviation from this neutral structure means that net lender sectors and net borrower sectors are appearing and the need emerges for financial intermediaries to cover the whole economy. The national credit systems then include credit institutions that manage cross sector financial flows.

In Chart 2 we have grouped 5 smaller charts successively presenting the public and private (non-financial)



3. The presentation of following aggregates comes from consolidated balance sheets of financial institutions provided by the Bank of Greece. The reported data correspond to "levels" (stocks) of assets and liabilities.

them exceeded their deposits in the domestic credit system.<sup>4</sup>

The relations described remain stable in the period up to 2007 and mark the basic fact that domestic households were the “funding sector” of the growth of bank intermediation in the economy. Similarly, the public sector and the domestic business sector were those to which liquidity was systematically released by the domestic credit system to be diffused to the economy.

As early as 2008, the private sector’s total net position clearly tends towards negative figures. Net positions of the other sectors are also affected negatively. The 2009-2011 crisis reversed the balance of previously existing funding streams in at least two ways, as is apparent in the smaller charts. The simple observation of the economy’s conditions is supported by these upheavals. An obvious change is that of a distinct deterioration of the public sector’s net position from 2008. Essentially, it stands to reason that market deterioration in that year (Lehman Brothers) and the public sector’s perceived exclusion from international markets shifted public funding requirements to the domestic credit system. This shift led to the second obvious change: the termination of credit expansion to the private sector. This second change must have contributed decisively to the third shift which seems to take shape with a one year lag, starting from 2009: the beginning of the continuous reduction of household deposits until 2011 (and to the present). This shift is fundamental because it deconstructs the development model of banking intermediation in the euro era and the period preceding it. The reduction of deposits is responsible, as I said, for the change in monetary aggregates and underlies the appearance of the economy’s disintermediation during the crisis.

The phenomenon of deposit leakage from the domestic banking system has been multiply interpreted.<sup>5</sup> Consumption smoothing amid major reductions in available income, cash demand for tax payments, deposit exports abroad and holding of available cash as store of international value (i.e. foreign exchange) are common interpretations. The phenomenon to be assessed however is the reduction of deposits resulting from credit tightening itself. A characteristic of the outlined aggregates of Diagram Series 2 is that we first observe the credit shift and subsequently the shift in deposits.

### C. From bank to non-bank liquidity

The change in the net positions of the economy’s sectors is equivalent to a movement in tectonic plates. The fundamental energy that drives this movement stemmed from the primary actions of the economy’s entities, and more specifically from credit demand, on one hand, and demand for savings products on the other. The change in credit supply ( $\Delta C$ ) can be considered as a liquidity release (if positive) from banks to the economy. The change in deposit products’ holding ( $\Delta D$ ) can be regarded as a liquidity-absorption (if positive) by banks. The difference ( $\Delta L$ ) is:

$$\Delta L = \Delta C - \Delta D,$$

and captures the flow of liquidity to and from the banking system. Indeed, when

$$\Delta L > (<) 0,$$

a net increase (decrease) occurs in non-bank liquidity in the economy. A long and continuous series of positive values of the  $\Delta L$  leads to disintermediation, whereas a long and continued series of negative values of the  $\Delta L$  indicates a growing preference of economic entities for “mediated” liquidity. The systematic increase of non-bank liquidity can theoretically be driven to various forms of values storage: cash, non-bank securities, foreign claims, gold or other precious metals. Excluding changes in foreign claims that are (partially) readable in balance of payments data, the exact distribution of non-bank liquidity in various forms is not observable and can only be subject to speculation.

The following charts describe the values of the  $\Delta L$  for the whole domestic banking system but also for every sector of the economy. The data used represent *annual* changes.

Chart 3 contains smaller charts which correspond to those presented in Chart 2. These diagrams show the contribution of each domestic sector to *change* in non-bank liquidity.<sup>6</sup> For this reason, the chart shows the aggregates ( $\Delta C$ ,  $\Delta D$ ,  $\Delta L$ ) since the positive change in credit and the negative change in deposits indicate the flow of non-bank liquidity. The depicted domestic sectors are the public (General Government) and private sector, and the subdivisions of the latter, i.e. non-financial businesses and households.

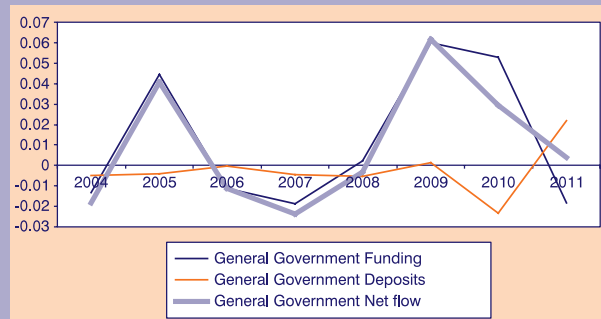
4. These aggregates refer only to assets and liabilities of credit institutions against foreign entities. Therefore, they do not include Greek government’s liabilities abroad, which of course are considered as “non-bank liquidity” from the perspective of the present analysis.

5. See precise analysis in National Bank of Greece, *Greece: Monthly Macroeconomic Outlook*, March 2011.

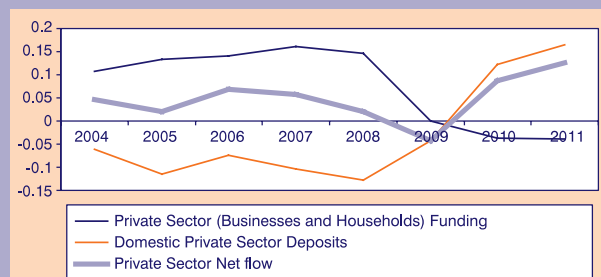
6. Following aggregates refer only to flows that capture the change in short-term trends.

**CHART 3**  
**Contribution of the economy's sectors to non-bank liquidity ( $\Delta C, -\Delta D$ )**

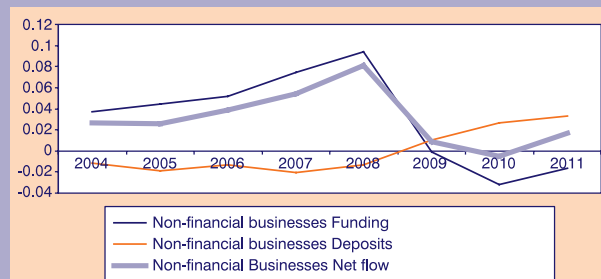
**3A Public sector**  
**Flows/GDP**



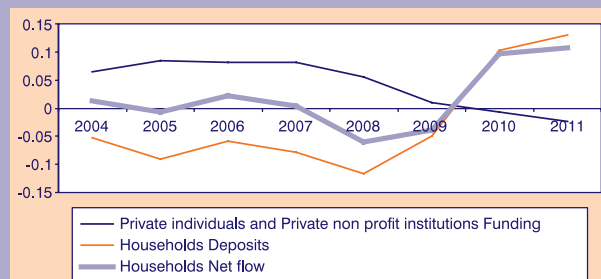
**3B Private sector**  
**Flows/GDP**



**3C Non-financial businesses**  
**Flows/GDP**



**3D Households**  
**Flows/GDP**



These charts reveal several aspects of liquidity's behavior and we can focus on the main ones.

To start with, the significant difference in behavior between the public sector and businesses and households is obvious. Public sector accounts affect liquidity primarily through changes in borrowing and much less than through changes in public sector deposits. Credit to the public sector shows larger fluctuations both before and after the critical date of 2009. These fluctuations are probably the result of a complex process involving, on the one hand, primary budgetary balances and, on the other, actual external funding from international borrowing. The fundamental conjecture that can be proposed here is that debit/credit entries from the domestic banking system to the public sector are not the result of primary decisions but consequences of other more strategic variables such as external borrowing. It is from this perspective that we can also interpret the dramatic increases of credit to the public sector observed in 2009 compared with 2008. It is the first year of crisis in which difficulty in external borrowing occurs, eventually to be resolved by the first memorandum.

Unlike the public sector, the behavior of businesses and households is highly relevant to the fluctuations of liquidity in the economy. Three observations are obvious from the simple reading of charts 3B, 3C, 3D:

First, throughout the period before the crisis, non-bank liquidity is balanced and consistent with the predictions of theory and international experience. Credit changes in tandem with deposits, so that non-bank liquidity maintains a relative balance.

Second, the reduction of credit to the private sector is huge and quite steep in 2009, in prominent correlation with the huge and sudden increase in credit to the public sector. Essentially, then, in 2009 we observe a net displacement of the private sector by the public sector in matters of credit supply. The displacement is too large, since it corresponds to about 6-7 percent of GDP. It is even higher when we consider that this is a period of declining demand, during which financing to the private sector has to cover additional needs in maintaining liquidity reserves and working capital. We can reasonably speculate that 2009's displacement was a key mechanism in the diffusion of the crisis to the private sector, which took effect even before budgetary austerity measures (cuts, tax increases).

Third, the sharp decline in private sector credit, which occurs in 2009, can be considered as a development that impairs the flow of liquidity and causes a compensatory reaction of economic entities: a large reduction of deposits, which means withdrawals, restoring a desired level of non-bank liquidity. The combination of

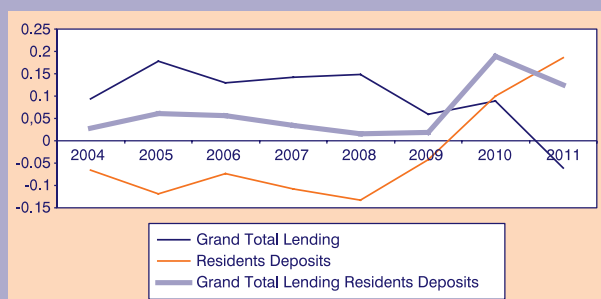
these movements is equivalent to a net disintermediation towards cash equivalents in the private sector. The essence of disintermediation is exactly an important substitution of bank liquidity by non-bank liquidity.

The overall picture emerges from the total changes in deposits and credits of the economy, as they arise from changes in financial institutions' balance sheets. Chart 4 shows two versions. The first (Chart 4A) measures more accurately the change in non-bank liquidity considering only the changes in residents deposits. The second measures more accurately the reduction in bank liquidity after taking into account changes in deposits by both residents and non-residents. However, the calculation of 4B overestimates non-bank liquidity in the Greek economy as it is almost certain that the withdrawals made by non-residents were immediately transferred abroad and did not represent internal non-bank liquidity.

**CHART 4**  
**Financial flows**

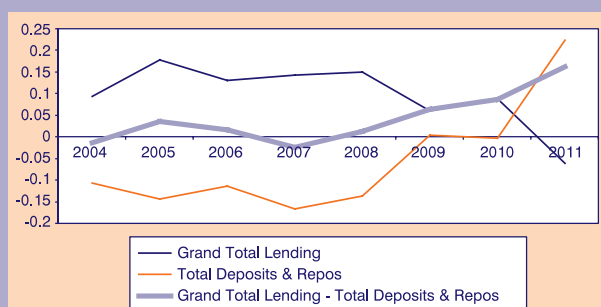
**4A Financial flows**  
**(Non-resident Deposits)**

Flows/GDP



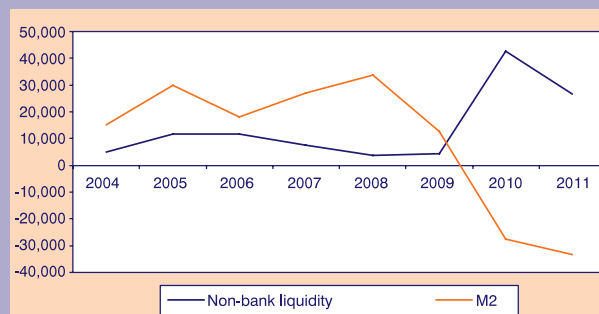
**4B Financial flows**  
**(Resident and non-resident Deposits)**

Flows/GDP



In any case, the picture is the same in terms of interpretation. In Chart 5 there is a critical distinction showing

**CHART 5**  
**Bank and non-bank liquidity**  
**(million euros)**



the reverse processes of change in bank and non-bank liquidity. The general change of non-bank liquidity derives from 4A above and simultaneously the Chart includes the change of M2.

The substitution process of bank by non-bank liquidity is sharp and clear. In fact, its beginning occurs during 2008, in 2009, the lines cross and the ascendancy of non-bank liquidity consolidates.

#### **D. Conjectures on non-bank liquidity**

The key finding of the preceding calculations is the clear evidence that after 2009, unlike the previous period, we note a widespread substitution of bank by non-bank liquidity.

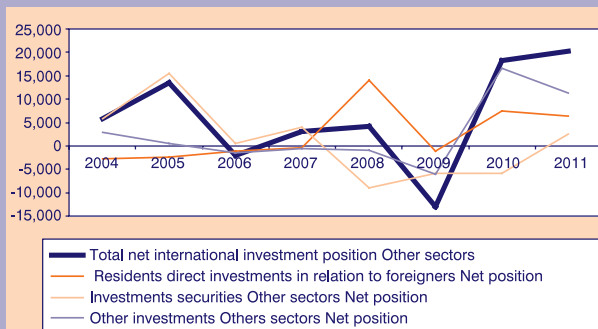
The release of non-bank liquidity (from the domestic credit system) from 2009 to 2011 amounts approximately to a cumulative sum of € 70 billion. Where is this huge amount located? The answer cannot be given without acknowledging that Greece is, as a member of the Eurozone, an economy open to capital flows. If we consider the net change in the private non-financial sector's claims against the external sector, we can distinguish the size of net outflows that occurred during the period of crisis. Chart 6 depicts the changes in net claims in different categories of the private, non-financial sector.<sup>7</sup>

The strong positive change in private individuals' net international investment position occurs in 2010-2011. Cumulatively over the three years 2009-2011, the change in net position was approximately € 30 billion. Although to some commentators such outflows are illegal or even unethical, freedom of capital flow is the cornerstone of the Eurozone Treaty. The increase in private outflows is consequential to investment rationality under conditions

7. The data quantify *net* changes, i.e. increase in assets minus increase in liabilities of private institutions, excluding credit institutions. The positions of the latter are reflected in assets and liabilities magnitudes of these institutions on the data described above.



**CHART 6**  
**Change in net private claims abroad**  
**(million euros)**



Source: Bank of Greece, International Investment Position

of increasing uncertainty in the Greek economy and with freedom of capital flow to and from Greece. In any case, outflows absorb a significant part of the increase in non-bank liquidity. The remaining aggregate from this increase, minus the outflow, is therefore approximately €40 billion.

The process of increase in non-bank liquidity in the economy is compatible with two widely accepted premises. First, it creates a critical situation for banks which cannot fulfill their primary role, namely intermediation between monetary savings and credit supply. Therefore, credit stringency is maintained and worsening, and this becomes a great obstacle to any attempt for recovery of economic activity in the country.

Secondly, the large increase of non-bank liquidity is certainly linked to new uncertainties which enveloped the system of social expectations in Greece during the crisis. One is the uncertainty about remaining in the euro and the reasonable attempts to safeguard the value of savings against the possibility of exit. Flight to the currency relates to its basic function as a “store of value”. The other uncertainty probably relates to an attempt to shift values beyond the reach of tax collection mechanisms which, in conditions of fiscal crisis, seek or are expected to tax accumulated values. The holding of currency is associated with the anonymity it provides, since its value is controlled by its anonymous bearer. These are theoretical premises that appear reasonable in the context of an unprecedented fiscal crisis occurring in an economy with stable currency.

The increase in liquidity as a means of non-bank self-insurance against macroeconomic uncertainty has a strong self fulfilling feature since it adversely affects bank stability. This effect feeds the uncertainty further.

But there is another important reason that promotes demand for non-bank liquidity. Moving from bank to non-bank liquidity creates an impairment of the effectiveness of payment system. As I mentioned before, a payment system based on bank debit/credit entries requires a much smaller volume of exogenous money for handling a certain volume of transaction than a payment system that runs on cash. Reduction of bank and increase of non-bank liquidity indicates the transition to a system that “consumes” more liquidity for a given volume of transactions. This effect is not directly related with increased uncertainty but also contains a self feeding feature. Thus a liquidity unit that is converted from feed a bank to a non-bank unit creates *de facto* a net reduction of effective liquidity in the economy. Therefore, the “liquidity crisis” is directly enhanced by its transformation from bank to non-bank liquidity.

### E. Outlets and regularizations

Theoretically, holding a large volume of non-bank liquidity in the economy is not a sustainable situation. Gradually, this liquidity will seek a return to intermediated forms which will offer returns and safety. A possibility is for cross-border outflows to continue and to increase. A second possibility is the creation of non-bank markets that could absorb non-bank liquidity providing guarantee of their value or very high yields. An (unwanted) version of this possibility is the development of financial “black markets”, traces of which have already appeared.

A legitimate version of this same possibility would be the establishment of markets for certificates of deposit already existing in other countries. But this version requires some external source of assurance, which is not currently in sight. An institutional body like the European Investment Bank, for example, could use instruments that would attract non-bank liquidity, in the form of special bonds for Greece or certificates of deposit. The funds could be used either for direct and selective corporate finance in Greece or for programs of targeted funding through banks. Other institutional pillars could also be designed for the development of such markets.

The restoration of non-bank liquidity in intermediated forms can and should of course have also as a primary policy goal the restoration of deposits in Greek banks. Bank recapitalization will contribute positively to this goal, but it is doubtful whether this will be sufficient, since the trend of liquidation of deposits has strengthened in the early months of 2012. Bank recapitalization is not sufficient *per se* to eliminate the fundamental macroeconomic uncertainty that motivates the shift to

non-bank liquidity. Interest rate policy to attract deposits cannot overcome this uncertainty. A European –even partial– deposit guarantee scheme would have a catalytic role in this field.

It is finally clear that the opportune political debate concerning rejection of the loan agreement, which is the only channel left for the public sector’s external financing, fuels intensely those exact expectations that drive the shift of liquidity to non-bank forms. Political management of expectations requires great caution in the current situation.

The expansion of non-bank liquidity and the disintermediation it implies, as I already explained, affects dramatically the sector of non-financial businesses which, traditionally, is the net borrower of the economy. While the other traditional borrower, the public sector, is covered by official European lending, the Greek business sector is faced with a debilitating credit shortage. This is

a major financial problem for the economy in its current state and it acts as a basic mechanism of the general crisis.

Targeted policies that would distinguish creditworthy entities likely to perish from lack of liquidity (illiquid agents), from insolvent agents are sorely needed. This means two things: First, venture capital type institutions that will be able to make the distinction with long-term criteria. Second, a funding allocation system that would not, initially at least, be based on an open market interest rates policy, but on other types of allocation criteria. Export activities, activities that allow employment of idle industrial capacity in sectors with sufficient demand or, lastly, infrastructure investments are obvious choices. This type of policy will necessarily involve funding not restricted to a classical form of credit but to variations of the equity form that would allow funding with a development perspective and not just a prospect of debt repayment.

## ANNEX DATA

### Gross Domestic Product (million €)

	2004	2005	2006	2007	2008	2009	2010	2011
Gross Domestic Product at market prices	185,266	193,050	208,893	222,771	232,920	231,642	227,318	215,088

### Greek contribution to key monetary aggregates in the euro area (balances in millions of €)

	End of period	Dec-03	Dec-04	Dec-05	Dec-06	Dec-07	Dec-08	Dec-09	Dec-10	Dec-11
Currency in circulation		8,791	10,835	12,212	13,377	14,247	16,318	19,122	20,383	21,370
M1		88,243	102,530	111,419	113,485	113,084	106,917	122,287	111,214	95,942
M2		122,577	137,877	167,618	185,751	212,893	246,627	259,431	231,852	198,479
M3		149,577	163,099	175,640	193,617	219,927	251,397	261,090	232,880	199,207

### Lending to residents other than MFIs by domestic MFIs (excluding Bank of Greece) (end of period balances, in million Eur)

	End of period	Dec-03	Dec-04	Dec-05	Dec-06	Dec-07	Dec-08	Dec-09	Dec-10	Dec-11
Grand Total of Lending		140,807	158,219	192,722	219,944	251,665	286,398	300,316	320,522	307,286
General Government		36,958	34,465	43,084	40,786	36,577	37,075	50,995	63,048	59,140
Private sector (Households and Businesses)		103,848	123,754	149,639	179,158	215,088	249,324	249,321	240,991	232,787
Non-financial businesses		59,284	66,229	74,812	85,579	102,160	124,131	123,820	116,514	113,044
Individuals and private non-profit institutions		40,229	52,323	68,630	85,584	103,801	116,866	119,280	117,747	112,662

### Deposits and repos of non-MFIs in MFIs in Greece (except Bank of Greece) (end of period balances, in million Eur)

	End of period	Dec-03	Dec-04	Dec-05	Dec-06	Dec-07	Dec-08	Dec-09	Dec-10	Dec-11
Residents		130,395	142,680	165,499	180,916	204,940	235,878	245,470	222,874	182,790
General Government		4,244	5,149	5,918	5,979	7,011	8,258	7,940	13,269	8,564
Businesses and Households		126,152	137,532	159,581	174,937	197,929	227,620	237,531	209,604	174,227
Non-financial businesses		22,197	24,287	27,903	30,612	35,107	38,185	35,877	29,810	22,644
Households		101,404	111,154	128,750	141,070	158,414	185,424	196,860	173,510	145,370
Residents of other Eurozone countries		686	705	453	587	841	1,940	1,825	1,725	1,395
Non Eurozone residents		8,949	16,469	21,634	29,955	42,925	42,570	32,248	55,644	48,086
Total deposits and repos		140,030	159,855	187,587	211,458	248,706	280,388	279,544	280,243	232,271

### International investment position (in millions of €)

	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. DIRECT INVESTMENTS	-8,010	-10,785	-13,213	-14,328	-14,653	-637	-1,835	5,686	11,983
2. PORTFOLIO INVESTMENTS									
Assets									
Securities									
Bonds and notes									
Other sectors (bonds)	7,566	13,819	28,894	29,493	31,142	24,315	16,928	14,934	14,046
Money market instruments									
Other sectors (money market instruments)	391	417	1,489	2,118	5,325	5,506	4,522	258	458
Liabilities									
Securities									
Bonds and notes									
Other sectors	3,833	4,306	4,943	5,677	6,472	8,709	6,144	5,763	2,537
Money market instruments									
Other sectors	0	0	0	0	0	0	0	20	1
3. OTHER INVESTMENTS									
Assets									
Other sectors	16,467	18,106	18,973	18,029	17,534	16,105	15,614	25,076	32,690
Liabilities									
Other sectors	13,271	12,086	12,469	12,960	13,029	12,543	18,072	10,908	7,160

### Data from aggregated balance sheet of Credit Institutions Assets (End of period balance, in millions)

	End of period	Dec-03	Dec-04	Dec-05	Dec-06	Dec-07	Dec-08	Dec-09	Dec-10	Dec-11
<i>Assets against other CI</i>										
Other Eurozone countries		9,712	10,162	10,121	10,065	18,182	39,222	61,914	45,609	37,309
Other countries		12,652	12,258	18,843	23,222	31,311	36,204	36,820	36,058	28,623
<i>Assets (loans) against non-MFI</i>										
Other Eurozone countries		143	184	161	140	125	1,246	1,626	2,110	2,257
Other countries		3,701	3,897	4,374	4,616	8,043	11,346	11,400	4,407	4,131
<i>Securities other than shares and derivatives</i>										
Other Eurozone countries		5,055	3,547	5,243	5,330	5,184	7,436	6,921	4,892	3,574
Other countries		3,151	4,764	6,552	9,865	12,571	27,729	36,348	24,479	22,348
<i>Money market mutual fund units</i>										
Other Eurozone countries		0	0	0	0	0	0	0	0	0
Other countries		0	0	0	0	0	0	0	0	0
<i>Shares and other variable yield securities other than money market mutual fund units</i>										
Other Eurozone countries		119	174	420	278	1,051	2,206	2,712	2,448	2,480
Other countries		1,294	1,374	1,779	5,648	8,078	7,638	9,351	9,611	11,000