

Banks

Monetary Aggregates and Domestic Financial Assets: a set of statistics for referring to savings and financial investment

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Banco de México (Mexico's central bank, Banxico), published its Monetary Aggregates (MAs) based on the 2018 methodology. These new indicators replace those that the central bank published on a monthly basis until December 2017, based on the 199 methodology.

The monthly publication will now also feature information on Domestic Financial Assets (F). These indicators include the new Monetary Aggregates, complemented by statistics on equity holdings by both Mexican residents and non-residents.

Comparison of 2018 Monetary Aggregates with those that ceased to be published in December 2017 and which were based on the 1999 methodology shows that there is no significant difference between the M1 balance calculated using the two methodologies, as both use the same concept of immediate liquidity of the instrument used (checking accounts, current accounts etc.)

The differences between M2, M3 and M4 Monetary Aggregate balances in terms of the two methodologies are significant, however. One important reason for these differences is the degree of liquidity of the financial instruments considered. Such is the case with long-term savings instruments (for example, banking deposits where the residual term is greater than five years) and instruments which, as well as being long-term, are liquid only in special situations (retirement and housing funds that can be turned into cash only when the holder retires or buys a house).

The introduction of Domestic Financial Assets (F) complements the information on Monetary Aggregates by incorporating long-term non-liquid financial assets such as banking deposits with a residual term of over five years and retirement and housing savings funds. Similarly, F includes equity securities of private firms listed in the Mexican exchange market held by both resident and non-resident economic agents.

We see this updating of Monetary Aggregates as a positive step, given the significant development of the Mexican financial system since 1999, and because it allows the statistics generated to be internationally comparable. Similarly, the removal of illiquid securities means that the monetary aggregates can better fulfil their purpose of measuring the holding of those instruments that have similar characteristics to money in its widest sense.

In the case of Domestic Financial Assets, we see the introduction of new indicators that include information on less liquid instruments as a positive development, complementing their measurement with the inclusion of hybrid and equity securities. These indicators mean that more statistics that are more comprehensive are available regarding savings and financial investment alternatives in Mexico.

1. Characteristics of Monetary Aggregates – 2018 methodology

In January 2018, Banxico, the central bank, made changes to the methodology used to define Mexico's Monetary Aggregates (MAs) and to the published figures deriving from them. This means that the methodology that Banxico used to construct the MAs from 1999 to December 2017 will no longer be updated and that from January 2018 the MAs available will be those compiled using the 2018 methodology.

There are various reasons why Banxico changed the way that the MAs are calculated. On the one hand, the last time that Banxico updated its methodology was in 1999. The development and deepening of the financial system since then has facilitated increases in both the number and the types of financial intermediaries and instruments. Today there is also greater availability of information, resulting in improved published data in terms of quality and detail. On the other hand, in March 2016, the International Monetary Fund (IMF) published the new Monetary and Financial Statistics Manual (MFSM). This manual establishes guidelines for a standard definition of MAs at international level, and Banxico has adhered to these guidelines with the publication of the Monetary Aggregates based on the 2018 methodology. It should be pointed out that Banxico published the monthly MA 2018 data retroactively from December 2000.

The new definition of the MAs takes into account one narrow aggregate (M1) and three broad ones (M2, M3 and M4), as did the previous methodology. M1 includes the instruments that have the greatest liquidity held by residents, that is to say the banknotes and coins in circulation and demand deposits with issuers of money.¹ The M2 aggregate adds the following to M1: deposits with banks and other issuers with a residual term of up to five years, shares in debt funds and payables under repurchase agreements (repos)². M3 adds government securities held directly by resident money holders and issued by the federal government or the Mexican Bank Savings Protection Institute (IPAB). Finally, M4 has been redefined to include non-resident holdings of all the instruments included in M3.

Banxico also complemented MAs 2018 data with a new set of indicators called Domestic Financial Assets (F). These indicators include information on the MAs' plus information on other financial assets held by money holders but which because of their characteristics do not form part of the Monetary Aggregates. These include, for example, listed shares issued by companies resident in Mexico. These new indicators therefore include information on the various savings and financial investment alternatives in Mexico. Table 1 shows the structure of the new MAs and the "Fs".

1: Under the new methodology, Banxico considers households, non-financial private companies and other non-banking financial intermediaries as money holders. Meanwhile, M1 and M2 issuers of money are the Bank of Mexico, commercial banks, development banks, popular savings and credit institutions, credit unions and debt funds. Additionally, M3 and M4 include the federal government and the IPAB within the issuer sector.

2: Payables under repurchase agreements refer to the resources obtained by banks through repurchase agreements with the money-holding sectors.

Table 1 Monetary Aggregates and Domestic Financial Assets: components, structure and comparison with the 1999 methodology

	1999 Methodology	Modifications	2018 Methodology
M1	A.1 Notes and coins outside banks A.2 Checking accounts A.3 Current accounts A.4 Demand deposits in Savings and Loans (S&L)		B.1 Currency held by money holders B.2 Demand deposits in Banks (residents) B.3 Demand deposits in saving and loan associations (residents)
M2	A.5 Time deposits in banks and in S&L A.6 Federal Government bonds A.7 IPAB (Bank Savings Protection Institute) bonds A.8 Monetary regulation bonds (BREMS) A.9 Securities issued by the private sector A.10 Other public sector securities A.11 Retirement Savings Funds A.12 Housing Savings Funds	A.6 goes to M3 (2018) A.7 goes to M3 (2018) A.8 goes to M3 (2018) A.9 goes to F1 A.10 goes to F1 A.11 goes to F1 A.12 goes to F1	B.4 Time deposits up to five years (residents) B.5 Money-market mutual funds shares (residents) B.6 Repurchase agreements (repos)
M3	A.13 Sight bank deposits, non-residents A.14 Time bank deposits, non-residents A.15 Holdings of government bonds, non-residents A.16 Holdings of IPAB bonds, non-residents A.17 Holdings of BREMS, non-residents	A.13 goes to M4 (2018) A.14 goes to M4 (2018) A.15 goes to M4 (2018) A.16 goes to M4 (2018) A.17 goes to M4 (2018)	B.7 Holdings of government bonds, residents (A.6) B.8 Holdings of IPAB bonds, residents (A.7) B.9 Holdings of BREMS bonds, residents (A.8)
M4	A.18 Deposits of residents and non-residents in foreign agencies of Mexican banks abroad (Now this item is not part of the new monetary aggregates.)	A.18 At present does not longer is considered in MA 2018	B.10 Sight bank deposits, non-residents (A.13) B.11 Term bank deposits, non-residents (A.14) B.12 Holdings of government bonds, non-residents (A.15) B.13 Holdings of IPAB bonds, non-residents (A.16) B.14 Holdings of BREMS, non-residents (A.17) B.15 Holdings of debt mutual funds shares, non-residents B.16 Holdings of repos, non-residents
Domestic Financial Assets by component: F = F2 + FNB			
Domestic Market	Residents	F1 = M3 + C.1 + C.2 + C.3 C.1 Retirement and housing savings funds (A.11 + A.12) C.2 Securities issued by private firms, states, counties, government sponsored enterprises, productive state own enterprises (Pemex and CFE) and the National Infrastructure Fund (Fonadin, A.9 + A.10) C.3 Other banking liabilities of maturity greater than 5 years	
	Non-residents	FNR = M4 - M3 (Holdings of financial instruments of non-residents) + C.8 + C.9 + C.10 + C.11 + C.12 C.8 Holdings of equity of private firms listed in the Mexican Stock Exchange, non-residents C.9 Holdings of shares of equity mutual funds, non-residents C.10 Holdings of development capital certificates, non-residents C.11 Holdings of securities issued by private firms, states and counties, government sponsored enterprises, productive state owned enterprises (Pemex and CFE) and the National Infrastructure Fund (Fonadin), non-residents C.12 Other banking liabilities of maturity greater than 5 years, non-residents	
		F = F2 + FNR (Domestic Financial Assets)	

Source: BBVA Research based on data from Banco de México.

As analysed in detail in Section 4 of this document, there are differences between the Monetary Aggregates calculated on the basis of the 1999 Methodology and those calculated using the 2018 Methodology, which are summarised in Table 2. The main changes can be found in the broad aggregates (M2, M3 and M4) and are due to the following factors:

- 1. Reclassification of financial instruments** (marked in green in Table 2), for example with government securities of the IPAB and Monetary Regulation Bonds (BREMS) being included in M3, whereas with the previous methodology they were classed in M2.

2. **Exclusion of other financial instruments from the MAs** (marked in orange in Table 2), such as private sector securities, other public sector securities, retirement and housing savings funds and deposits with foreign branches of Mexican banks.
3. **Inclusion of other financial instruments** (marked in blue in Table 2), such as shares in debt funds and payables under repurchase agreements.

Table 2 Monetary Aggregates: comparison of 1999 and 2018 methodologies

1999 METHODOLOGY (excluding the public sector)	MONETARY AGGREGATE	2018 METHODOLOGY
<ul style="list-style-type: none"> • Currency held by money holders • Checking accounts • Current account deposits • Demand deposits in saving and loan associations 	M1	<ul style="list-style-type: none"> • Currency held by money holders • Demand deposits in Banks • Demand deposits in saving and loan associations
<ul style="list-style-type: none"> • Short-term deposits and securities in banks and saving and loan associations. • Public securities issued by the Federal Government • Public securities issued by IPAB • Public securities issued by Banco de México (BREMS) • Private sector securities • Other public securities • Savings funds for housing and retirement 	M2 minus M1	<ul style="list-style-type: none"> • Short-term deposits and securities of up to five-year residual maturity • Money-market mutual funds shares (MMMF) • Repurchase agreements (repos)
<ul style="list-style-type: none"> • Demand deposits in Banks (non-residents) • Short-term deposits and securities in Banks (non-residents) • Public securities issued by the Federal Government (non-residents) • Public securities issued by IPAB (non-residents) • BREMS (non-residents) 	M3 minus M2	<ul style="list-style-type: none"> • Public securities issued by the Federal Government • Public securities issued by IPAB • Public securities issued by Banco de México (BREMS)
<ul style="list-style-type: none"> • Deposits in branches and agencies of domestic banks abroad 	M4 minus M3	<ul style="list-style-type: none"> • Demand deposits in Banks (non-residents) • Short-term deposits and securities in Banks (non-residents) • Public securities issued by the Federal Government (non-residents) • Public securities issued by IPAB (non-residents) • BREMS (non-residents) • MMMF (non-residents) • Repurchase agreements (non-residents)

Green: instruments reclassified in the new methodology

Orange: instruments eliminated from the new definitions and included as Domestic Financial Assets

Blue: instruments added to the new methodology

Source: Banco de México

2. Methodological criteria for the new monetary aggregates and domestic financial assets

The 2018 MA methodology is based on the MFSM, which gives certain guidelines on ensuring that information on monetary aggregates is comparable between countries. The manual also considers two important characteristics that the components of each aggregate must have: (i) the degree of liquidity of the instrument in question, in terms of the speed and ease with which these instruments can be converted into money and (ii) the sector of the economy that uses the monetary instruments. To this end, the MFSM recommends classifying sectors into three categories: issuers of monetary instruments, holders of monetary instruments and neutral sectors.

- **Issuers:** these are institutions that issue monetary instruments that are considered to be money and which form part of their liabilities. These institutions are the central bank, commercial and development banks, popular savings and credit institutions and other intermediaries such as debt funds.
- **Holders:** those sectors that use the monetary instruments that they hold to purchase goods and services. These agents are private companies, households and other non-banking financial intermediaries³.
- **Neutral sectors:** the sectors that are neither issuers nor holders of money. While they may hold monetary instruments as part of their assets, their spending patterns tend to differ from those of households and companies, and therefore they do not necessarily react in the same way as these to macroeconomic shocks. These sectors typically include the central bank and non-residents (these are only seen as holders under the M4 aggregate classification).

As well as these considerations, the changes to methodology were also driven by the greater availability of information at present, allowing a more accurate measurement of the various indicators. Thus the new methodology takes the following into account:

- **Shares in debt funds (FIDs)** These are included in the new methodology (as part of the M2 aggregate) due to their high degree of liquidity and the fact that they are stores of value that do not fluctuate significantly over time. Debt funds were not explicitly included in the 1999 methodology as there were no statistics available on their balances. Only the holding of debt instruments was included, giving an approximate idea of the value of those shares.
- **Payables under repurchase agreements (Repos)** As they represent an important source of funds for banks⁴, the MFSM views repos as an instrument similar to short-term deposits received from the public and therefore they are included as part of the MAs (in the M2 aggregate). The previous methodology did not consider them as they could not be identified in the banks' balance sheets. Moreover, these transactions were previously recorded based on a legal criterion, that considered a temporary transfer of ownership of the recorded security. Currently "an economic criterion that views the underlying security as collateral in a financing transaction" is employed.
- **Short- and medium-term banking deposits** The new methodology considers only deposits that mature within five years. This is due to the MFSM's recommending the inclusion of monetary instruments with relatively short maturity terms, as their value fluctuates less than those with longer terms. They were not included in 1999, since no information was available on the residual terms of bank deposits.
- **Other financial instruments** The new methodology excludes debt instruments issued by private non-financial companies and the non-federal public sector from the MAs, as well as the assets in the individual accounts of workers set aside in retirement or housing funds. In the first case, their exclusion is based on the fact that the market prices of these instruments tend to be more volatile than government debt. In the second case, the MFSM does not recommend including them, since the beneficiaries cannot dispose of their assets immediately but have to wait until retirement or when they use their housing funds to request a mortgage.⁵ The previous methodology included these instruments because the information on MAs also sought to approximate the total circulation of

3: As a result of this classification, in the new methodology there is now no concept of Broader Monetary Aggregates, which, under the previous methodology, included in addition to the private savings reported in monetary aggregates (M1, M2, M3 and M4), public sector savings, comprising savings of the federal government, public companies and organisations, state and municipal governments, the government of Mexico City and economic development trusts.

4: Banks carry out these transactions in order to obtain financing, using a security that forms part of their assets as collateral.

5: These savings funds are governed by strict rules concerning their availability to their owners. Firstly, the legal and regulatory framework of the Retirement Savings System establishes that the obligatory contributions that private companies and public sector bodies have to make to workers' retirement and housing funds must be deposited in the respective individual sub-accounts. Furthermore, the Social Security Act establishes the conditions and the minimum number of weeks that a worker must contribute to the Mexican social security system in order to access the funds deposited in his or her retirement sub-account. As far as housing savings funds are concerned, both Fovissste (the National Housing Fund of the Institute of Social Security and Services for State Employees) and Infonavit (the National Workers Housing Fund Institute, which is made up of workers registered with the Mexican social security system), have rules in place for workers belonging to either organisation to access savings funds deposited in their housing sub-accounts, as well as the rules governing the obtaining of credit to complement their savings and allow them to purchase a home.

financial assets in Mexico (what were known as financial savings). These assets now form part of the set of indicators referred to as Domestic Financial Assets (F).

3. Redefinition of monetary aggregates and measurement of domestic financial assets

The redefinition of MAs based on the 2018 methodology is as follows:

- **M1:** the most liquid monetary aggregate held by Mexican residents. It consists of banknotes and coins held by the public plus demand deposits held by resident economic agents (households, private businesses and other non-banking financial intermediaries) with banks and popular savings and credit institutions. In other words, M1 consists of assets held by residents that can be considered as money or are immediately convertible into money.
- **M2:** M1 plus the balance of deposits maturing in less than five years in banks and popular savings and credit institutions, shares in debt funds and repos. For all these instruments, M2 takes account only of those held by residents.
- **M3:** M2 plus government securities, IPAB securities and Monetary Regulation Bonds (BREMS) held by residents. Therefore, according to the 2018 AM Methodology, M1, M2 and M3 consist of resources of Mexico's resident economic agents.
- **M4:** M3 plus instruments similar to those covered by M3 held by non-residents. In other words, sight and term deposits in banks, government securities, IPAB securities and BREMS, plus shares in debt funds and repos held by non-residents. M4 can therefore be seen as including, in addition to M3, all assets held by non-residents in bank instruments and other debt financial instruments issued in Mexico.⁶

The new methodological criterion for the redefinition of the MAs implied that some financial instruments which had previously been included were now excluded, among other reasons due to their limited degree of liquidity. Nevertheless, the instruments excluded form a significant part of the assets of their holders. Banxico therefore established a set of indicators known as Domestic Financial Assets (F) which add to the MAs the remainder of the instruments in the financial system which form part of the savings and financial investments of the holding sectors. Thus the components of the F indicators are the following (see Table 3):

- **F1:** includes M3 plus retirement and housing savings funds, securities issued by private companies, states and municipalities, productive state companies, Comisión Federal de Electricidad (CFE, the state-owned electric utility) and Petróleos Mexicanos (Pemex, state-owned petroleum company), the National Infrastructure Fund (Fonadin) and banking deposits with a residual term of over five years. All of these assets are held by residents.
- **F2:** includes F1 plus shares in private companies listed on the Mexican Stock Exchange, shares in equity investment funds, CBFIs (units in REITS, considered as hybrid financial instruments as they contain a mixture of fixed and variable income) and capital development certificates (considered to be long-term securities offering variable and uncertain returns). All such instruments need to be held by residents in order to be included in F2.
- **FNR:** this consists of instruments included in F2 held by non-residents.

6: It should be pointed out that although the MFSM does not consider instruments held by non-residents as money, in the case of Mexico they have been included, due to the fact that foreign companies operating in Mexico typically use financial instruments in pesos. There is also significant substitution between the resident and non-resident sectors in holdings of federal government securities.

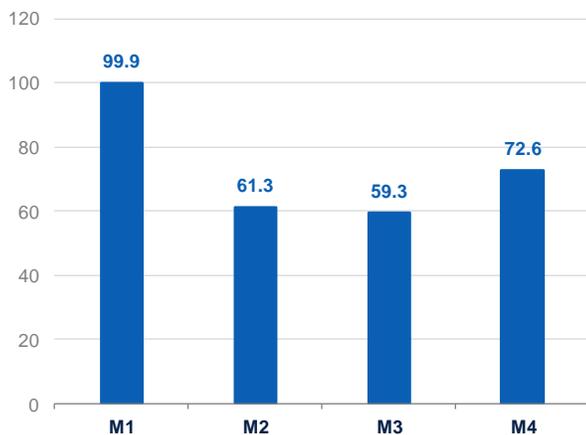
- **F**: the sum of F2 plus FNR. Seen as the broadest possible assessment of intermediary instruments in the financial system held by money-holding sectors.

4. Statistical differences between the monetary aggregate methodologies

Comparison of the balances of the components of the 1999 and 2018 methodologies of Monetary Aggregates and Domestic Financial Assets

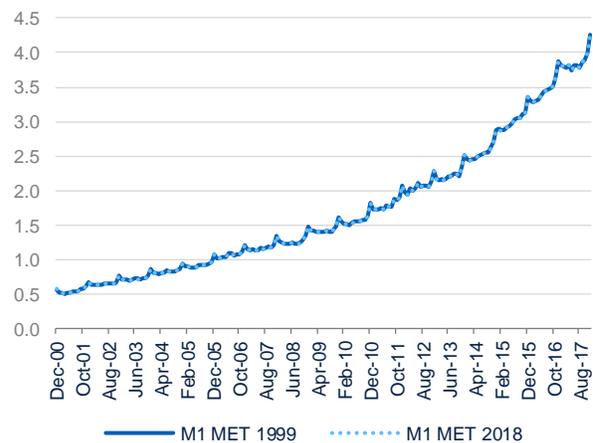
Tables 1 and 2 show a comparison of the balances of the various components of the 1999 and 2018 Monetary Aggregates and Domestic Financial Assets. To the extent that the 2018 MAs take into account fewer instruments than those of 1999, the M4 balance which is obtained through the former is less than the balance of this aggregate under the 1999 methodology, for both the Monetary Aggregates and the Broader MAs (which include public sector savings).

Figure 1. M1, M2, M3 and M4 Monetary Aggregates under the 2018 methodology (MET) as a percentage of those based on the 1999 methodology, as of December 2017 (Comparison with the respective aggregate, %)



Source: BBVA Research based on data from Banxico

Figure 2. M1 Monetary Aggregate (balance in trillions of current pesos)



Source: BBVA Research based on data from Banxico

Based on a comparison of the components of the MAs under the 1999 methodology with those under the 2018 methodology (not including the public sector), we can see that in the case of the M1 monetary aggregate, there is no difference between the balances, since as shown in Figure 1 they are 99.9% the same. When we compare the historical development of the two indicators, we see similar behaviour, both in terms of balances (Figure 2) and of growth rates (Figure 3). Between the two methodologies, there are no variations conceptually speaking in the definition of the financial instruments that make up this aggregate, and the small differences could be attributed to improvements in the measurement of the items.

On the other hand, the difference between M2 monetary aggregate balances is significant, as those from the 2018 methodology represent 61.3% of the balance of resources obtained from the definition of this aggregate using the 1999 methodology (as of December 2017, see Figure 1). One of the main differences is due to the fact that the 2018 methodology no longer includes retirement and housing savings funds in M2. Instead, the 2018 MA methodology and the introduction of the Internal Financial Asset (F) indicators recover the information on this important means of saving, recording it in the definition of F1.

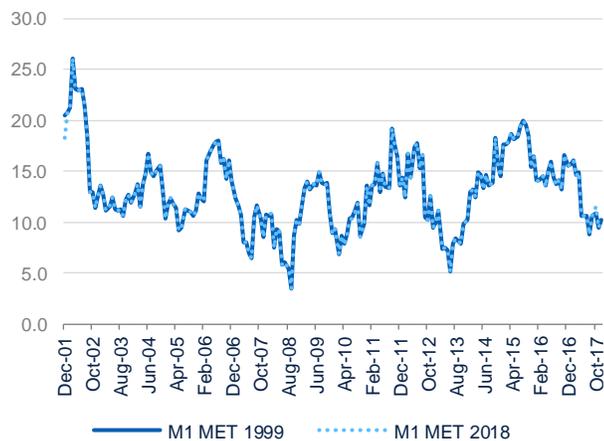
Table 3 Treatment of government securities in the Monetary Aggregate methodologies

1999 METHODOLOGY	MONETARY AGGREGATE	2018 METHODOLOGY
<ul style="list-style-type: none"> Short-term deposits and securities in banks and saving and loan associations. Public securities issued by the Federal Government Public securities issued by IPAB Public securities issued by Banco de México (BREMS) Private sector securities Other public securities Savings funds for housing and retirement 	M2 minus M1	<ul style="list-style-type: none"> Short-term deposits and securities Money-market mutual funds shares (MMMF) Repurchase agreements
<ul style="list-style-type: none"> Demand deposits in Banks (non-residents) Short-term deposits and securities in Banks (non-residents) Public securities issued by the Federal Government (non-residents) Public securities issued by IPAB (non-residents) BREMS (non-residents) 	M3 minus M2	<ul style="list-style-type: none"> Public securities issued by the Federal Government Public securities issued by IPAB Public securities issued by Banco de México (BREMS)

Source: BBVA Research

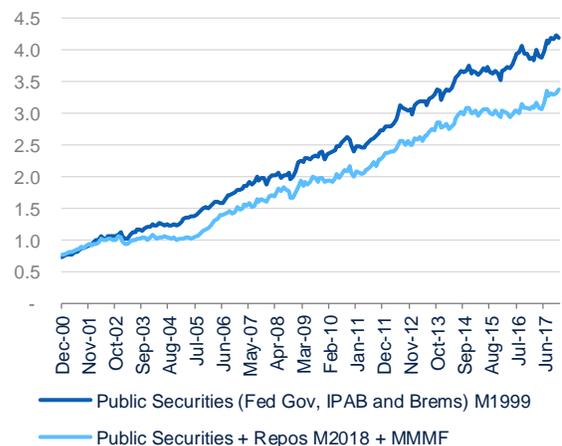
A further difference regarding the M2 monetary aggregate between the two methodologies lies in the treatment given to federal government securities, IPAB securities and BREMS (government securities). The 1999 methodology included, as part of M2, the total holding of these securities. The new methodology includes, as part of M2, shares in debt funds and payables under repurchase agreements, which represent a part of the total government securities holding. Other securities holdings (not in debt funds or repos) are included in the M3 aggregate. Therefore, to obtain an indicator of the balance of government securities in circulation that is comparable between methodologies, one would have to take, on the one hand the total balance of these securities under the previous methodology, and on the other the sum of the value of shares in debt funds, the amount of repos and the remaining securities in circulation included in M3 (see Table 3). The historical comparison of the two methodologies in terms of balances and growth rates is shown in Figures 4 and 5 respectively. While the growth rates are similar, the balance under the new methodology is lower than when using the 1999 methodology. This difference could be due to (i) differing valuations between one methodology and another and/or (ii) the exclusion of retirement funds from holdings of government securities in the Monetary Aggregates under the new methodology.

Figure 3. M1 Monetary Aggregate (Nominal annual growth rate, %)



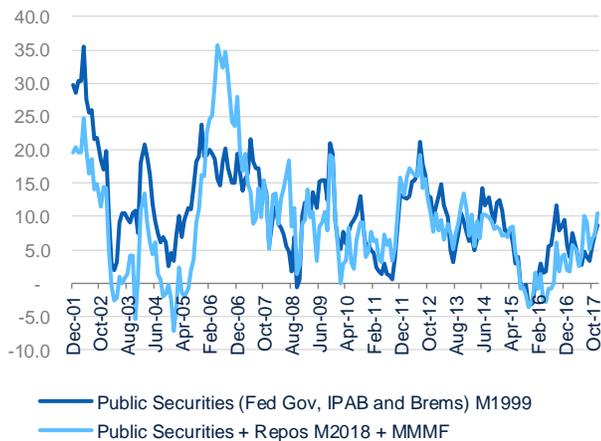
Source: BBVA Research based on data from Banxico

Figure 4. Government securities in the Monetary Aggregates, comparison of 1999 and 2018 methodologies (Balances in trillions of current pesos)



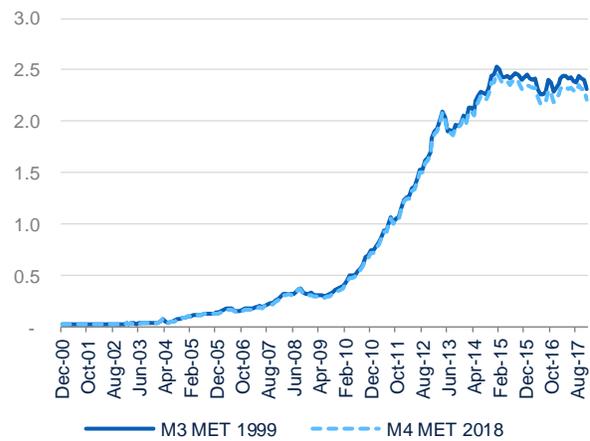
Source: BBVA Research based on data from Banxico

Figure 5. Government securities in the Monetary Aggregates, comparison of 1999 and 2018 methodologies
(Nominal annual growth rate, %)



Source: BBVA Research based on data from Banxico

Figure 6. Non-resident sector in the Monetary Aggregates, comparison of 1999 and 2018 methodologies
(Balances in trillions of current pesos)



Source: BBVA Research based on data from Banxico

In the case of the M3 and M4 Monetary Aggregates, the balance of resources considered under the 2018 methodology in comparison with that of 1999 represented only 59.3% in the former case and 72.6% in the latter (Figure 1). In these aggregates, the main differences stem from the reclassification of securities. In the M3 aggregate, the previous methodology included the non-resident sector (both deposits and holdings of government securities). In the current methodology, this sector is included in M4, while in M3, as stated earlier, we find holdings of government securities not held by debt funds or subject to repurchase agreements (Table 4).

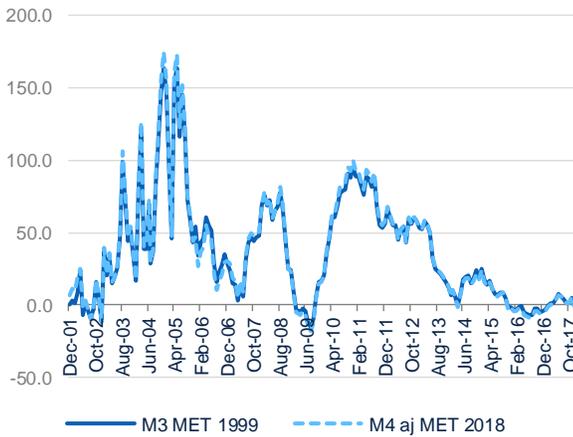
Table 4 Non-resident sector holdings in the Monetary Aggregate methodologies

1999 METHODOLOGY	MONETARY AGGREGATE	2018 METHODOLOGY
<ul style="list-style-type: none"> • Demand deposits in Banks (non-residents) • Short-term deposits and securities in Banks (non-residents) • Public securities issued by the Federal Government (non-residents) • Public securities issued by IPAB (non-residents) • BREMS (non-residents) 	M3 minus M2	<ul style="list-style-type: none"> • Public securities issued by the Federal Government • Public securities issued by IPAB • Public securities issued by Banco de México (BREMS)
<ul style="list-style-type: none"> • Deposits in branches and agencies of domestic banks abroad 	M4 minus M3	<ul style="list-style-type: none"> • Demand deposits in Banks (non-residents) • Short-term deposits and securities in Banks (non-residents) • Public securities issued by the Federal Government (non-residents) • Public securities issued by IPAB (non-residents) • BREMS (non-residents) • MMMF (non-residents) • Repurchase agreements (non-residents)

Source: BBVA Research

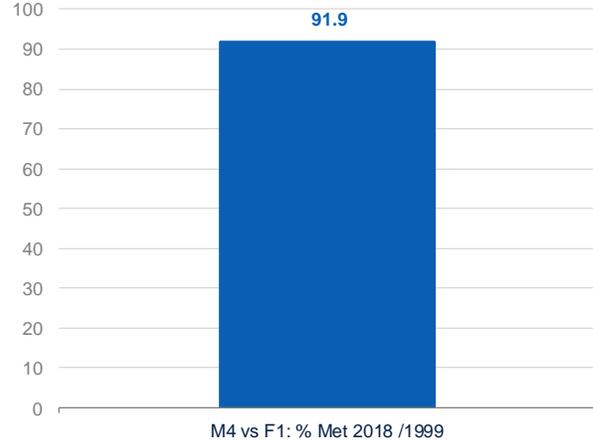
It should be highlighted that the sum of the deposits and of non-residents security holdings is similar in the two methodologies, both in terms of balances (Figure 6) and growth rates (Figure 7). Also, at the end of December 2017, the balance of the M4 aggregate under the 1999 methodology relative to the F1 component of Domestic Financial Assets represented almost 92% of the balance of the latter (Figure 8), which although it points to the significant differences between the two concepts, is nevertheless limited and represents only 8% in terms of balance.

Figure 7. Non-resident sector in the Monetary aggregates, comparison of 1999 and 2018 methodologies (Nominal annual growth rate, %)



Source: BBVA Research based on data from Banxico

Figure 8. M4 Monetary Aggregate vs. F1, comparison of F1 balance with the M4 under 1999 methodology, as of December 2017 (%)

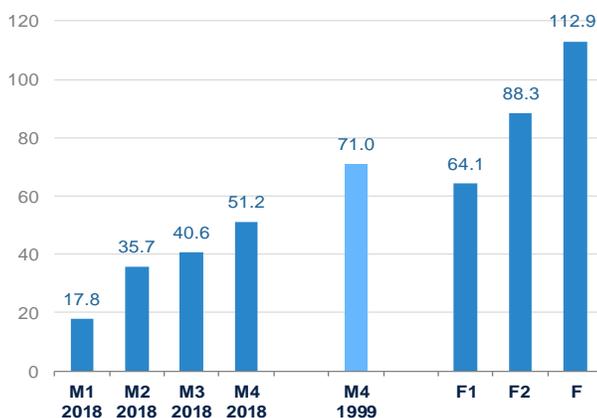


Source: BBVA Research based on data from Mexico's central bank

Apart from this it is also notable that the notion of Domestic Financial Assets, while it incorporates the various items of the Monetary Aggregates under the 2018 methodology and other financial instruments, does not rank the financial assets on the criterion of liquidity as is the case now with the various components of the MAs calculated on the basis of the 2018 methodology.

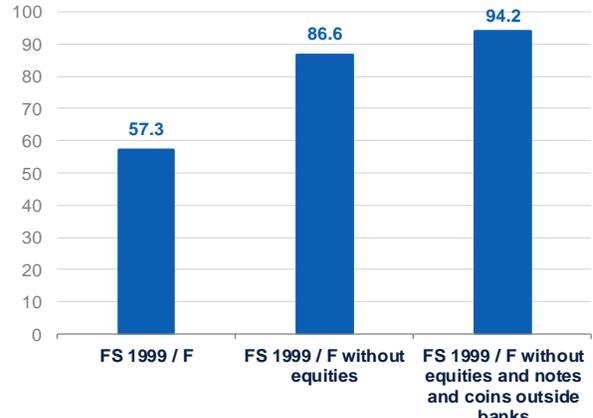
A relevant comparison can be made between the components of the 2018 methodology MAs and those of the Domestic Financial Assets with respect to GDP. The M1 monetary aggregate as annual average of 2017 represented 17.8% of GDP for that year (Figure 9). Furthermore, the proportion of M2 with respect to GDP was 35.7%, twice that of M1. The relative importance of the M3 and M4 aggregates as a percentage of GDP was 40.6% and 51.2% respectively. By way of comparison, M4's annual average as per 1999 methodology as a proportion of GDP was 71.0%. The annual average percentages of Internal Financial Asset components with respect to GDP in 2017 were as follows: F1: 64.1%, F2: 88.3% and F: 112.9%, as shown in Figure 9.

Figure 9. Components of the Monetary Aggregates and of Domestic Financial Assets (Annual average proportion of GDP in 2017, %)



Source: BBVA Research based on data from Banxico

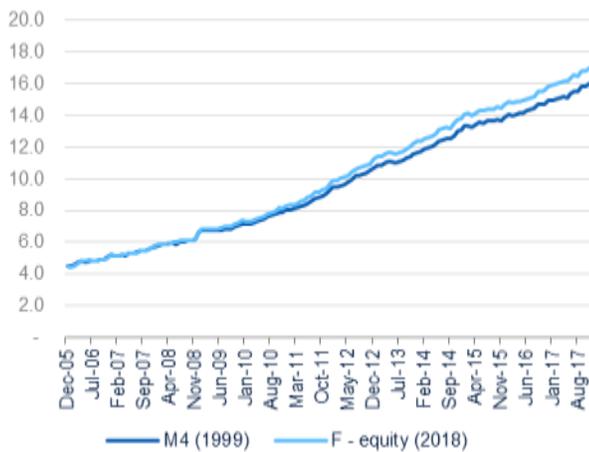
Figure 10. Financial savings 1999 as a proportion of Domestic Financial Assets (F) in December 2017 (%)



Source: BBVA Research based on data from Mexico's central bank

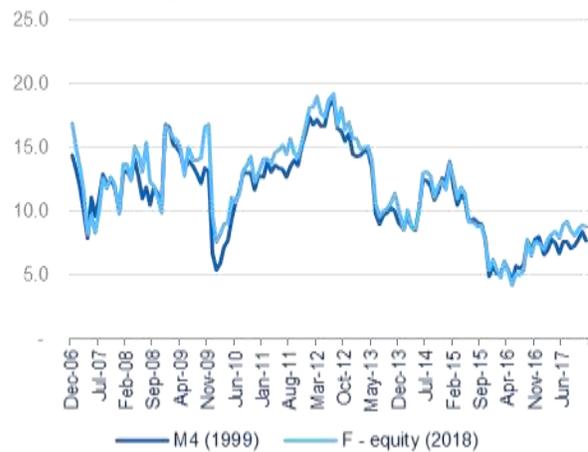
It is worth mentioning that 1999 methodology Monetary Aggregates refer to the concept of Financial Savings (FS), this being understood as the M4 monetary aggregate less currency held by money holders. However, the concept of FS refers to all bank and non-bank savings instruments, both liquid and non-liquid held by resident and non-resident economic agents. Domestic Financial Assets (F) is a broader concept which refers to all savings and investment instruments existing in the financial system, including available hybrid instruments and equity securities. Thus total FS can be compared with certain components of F. As shown in Figure 10, in December 2017 the FS of the 1999 Monetary Aggregates represented 57.3% of F, 86.5% of F with the exclusion of equity and 94.2% of F without equity and currency held by money holders. Similarly, a historical comparison shows similar behaviour both in balances (Figure 11) and growth rates (Figure 12) between the F of 2018, excluding equity securities, and the M4 aggregates of 1999.

Figure 11. Domestic Financial Assets excluding equities vs. M4 1999 methodology
(Balances in trillions of current pesos)



Source: BBVA Research based on data from Banxico

Figure 12. Domestic Financial Assets excluding equities vs. M4 1999 methodology
(Nominal annual growth rate, %)



Source: BBVA Research based on data from Banxico

The above data show that the difference between 1999 FS and F is due to hybrid financial assets and equities. Furthermore, if equities are excluded along with holdings of banknotes and coins held by the public, the difference between 1999 FS and this latter savings measurement resulting from the second case is not great.

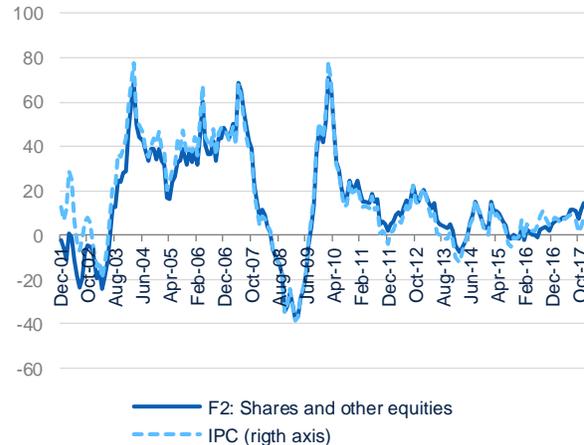
Finally, the inclusion of hybrid and equity securities is an important addition to the available metrics of intermediated assets in the financial system, since the value of these instruments as annual average of 2017 represented 37.4% of GDP, a figure that is very similar to the total of the M2 monetary aggregate. We should clarify that although Banxico gives no details in its methodology of how it values these instruments, we can assume that it is calculated at market value. Indeed, comparison of the evolution of F equities with the Mexican Stock Exchange Index of Prices and Quotations (IPC) shows that both the balance (Figure 13) and year-on-year variations (Figure 14) very closely follow the IPC's performance.

Figure 13. Holdings of equities and the Index of Prices and Quotations (Points and balances in billions of current pesos)



Source: BBVA Research based on data from Banxico and the Mexican Stock Exchange

Figure 14. Holdings of equities and the Index of Prices and Quotations (Nominal annual growth, %)



Source: BBVA Research based on data from Banxico and the Mexican Stock Exchange

Assessment

The new Monetary Aggregate and Internal Financial Asset statistics provide broad-based, internationally comparable indicators on a series of variables referring to intermediated assets in the Mexican financial system. We view these methodological changes as positive and agree with Banxico that they were needed, given the significant development of the Mexican financial system since 1999.

One addition to the new methodology that we see as positive is the inclusion of hybrid and equity securities, which represent an important investment option within the financial system. Having historical information holdings of these instruments complements existing information on financial savings.

As we have detailed in this note, the changes in methodology have meant important conceptual variations in the main aggregates and, as a result, amounts and trends have also been modified. Even so, we have seen that the majority of items considered under the previous methodology continue to be present in the new methodology, either as part of the Monetary Aggregates or within the group of securities that Banxico now refers to as Domestic Financial Assets. However, we have identified certain items that deserve to be disseminated in order not to lose information that could be useful for analysis. These concern the holding of public sector monetary instruments and securities.

Under the previous methodology, there was a broad definition of Monetary Aggregates that included both deposits and the holding of public sector securities, items which are no longer considered under the new methodology. Although these concepts no longer form part of the Monetary Aggregates, it would be desirable for Banxico to continue to publish the figures, since monitoring them allows analysis of patterns of spending and investment in financial instruments on the part of the agents that make up this sector.

We hope that in the near future, Banxico will publish some kind of equivalent to the Broader Monetary Aggregates in the 2018 methodology. In this way Banxico would be complementing the information on the 2018 Monetary Aggregates in the same way as it did with the 1999 MAs. As a reminder, based on the 1999 MA methodology, Banxico published

both the MAs and the Broader MAs, and completing the information would facilitate comparison and understanding of the differences between the two methodologies in greater detail.

Apart from this, the extensions and reclassifications relative to the previous methodology require a detailed review in order to understand the main differences and thus make appropriate and beneficial use of the new indicators. It would therefore be important to have a more detailed methodological document explaining the main differences in the treatment of the data regarding the balances of the various instruments between one approach and the other (in terms of valuation, inclusion, exclusion and the reclassification of concepts), as some accounts present variations. It would also be recommendable to have a catalogue of other statistical tables (as well as those corresponding to Monetary Aggregates) which have been updated and the main variations and differences between the two. Such is the case with the statistics relating to bank resources and liabilities. The dissemination of this information will contribute to maintaining the consistency of the analysis and ensuring a better identification of the sources of the variations, which will, in turn, allow monitoring that is appropriate to Mexico's main savings and financial investment variables.

Disclaimer

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