Anticyclical provisioning scheme for Colombia

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Ample studies have been made and documented on the close relationship between the financial system's performance and the rhythm of economic activity. Many authors have noted how credit market conditions can not only affect the level of the most important real variables, but also their volatility[1]. Imperfections within the credit market make it very procyclical; hence, an unexpected shock would cause said market to propagate and amplify the shifts brought about by economic variables.

The financial system's response to the various phases of the cycle is characterized by high credit growth during the upswing phase and its rationing during the downswing. This behavior is related to the financial system's tendency to underestimate the credit risk during the upturn and to overestimate it during the downturn phase[2]. This wrong perception of risk creates distortions in the incentives for financial institutions to lend, makes credit excessively volatile, which negatively affects corporate and investment funding, and conveys a climate of instability, thereby transmitting the instability to the real sector.

Furthermore, financial institutions generate high profits during the cycle upswing, which are distributed among their stockholders, to be followed by a crisis during the downswing, with the ensuing possibilities of bankruptcy, state intervention, or government support at the expense of the national budget. Thus, this argues for the need to set up an anticyclical provisioning scheme to lower profit volatility throughout the economic cycle.

The purpose of this document is to determine the impact of having an anticyclical provisioning system in Colombia similar to the one in place in Spain. The simulations put forth in this document suggest that credit institutions would

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1 Bernanke *et al.* (1999).

2 Borio *et al.* (2001).

have to pay a high price in terms of having lower profits during the upturn phase. However, if no anticyclical reserves are created during the upswing phase, the opportunity of using these reserves as a cushion against losses during the most adverse phase would be lost.

I. Credit risk along the cycle

The increased demand for loans, which surges during an economic expansion, is generally met by financial institutions. These high loan growth rates are fed by a general wave of optimism. This bubble grows and is fed by high asset prices (and hence by the face value of the loan guarantees and the wealth of debtors), by less restrictive loan policies, and by increased competition among institutions in order to not lose market participation, among other reasons. This excessive abundance of funding during periods of high economic activity involves little or no assessment of risks by loan institutions in approving, for example, projects which would not have been considered viable under different circumstances. But, because of the favorable economic conditions and the debtors' positive payment capacity, these loans have not yet entered into arrears nor has any specific provisioning been made. In fact, it is during these boom periods that credit institutions are characterized not only by the high growth of loan disbursements but also by low provisioning levels and high reported profits.

To the extent that economic indicators begin to deteriorate, along with debtors' repayment capacity, then the loan risks that the credit institutions acquired during the upswing phase will also materialize. Non-performing loans and provisioning levels will also increase, which will negatively affect the returns and capital adequacy ratios of these credit institutions. The financial system's usual responses to this situation are often optimal on the individual level, but not on the collective level. Credit restrictions by these institutions (whether it be to capitalize themselves or to redirect their portfolios toward less risky assets at that moment) end up being quite severe and prolong the recessive phase of the cycle, as the link between savings and investments breaks, hindering the channeling of funds and limiting corporate funding.

Since credit institutions use provisioning to protect themselves against expected potential losses, its above described procyclical characteristics (high during recessions and low during an economic boom) is not consistent with the perception that the greatest risk exposure comes during the upturn phase. The rating systems used do not adequately identify the risks incurred during the boom phase. Only years later, when these risks materialize, are they borne and provisions made. This is why a wrong valuation of risk is made over time, since the current practice is to determine provisions according to the deterioration of the portfolio (*ex post* calculation) instead of taking into account the future potential risks on assets (*ex ante* calculation).

The new proposals on provisions made in the Basle agreement do not take into account the aforementioned perception of risks. These proposals focus on measuring credit risk and classifying lenders using models that are internal or external to the institution, taking as a reference the probability of default within a horizon of one year. Although the credit may be classified correctly, the determination of the actual quantity for provision will continue to depend on the phase of the economic cycle. The assumption that using historical data will cause loans to be well classified (minimum one complete cycle) does not correct the distortions that arise from making low provisions during periods of economic boom, when the probability of default is less, and then making excessive provisions during times of recession.

This inconsistency has also been found in Colombia. The Banking Superintendency's accounting requirements which refer to specific provisioning are based on the levels of portfolio in arrears and/or rated B, C, D, or E, without taking into account the latent risk in a current healthy portfolio. From another angle, the general provisions calculated as 1% of the gross portfolio are insufficient to cover variations in the cycle, as has been seen on past occasions. The new Risk Management System (SARC) currently in use by the financial system's institutions, clearly reveals the need to make anticyclical adjustments, but does not specify the methodology to be used[3]. We are proposing here that these adjustments be made based on anticyclical provisions.

II. Anticyclical provisions[4]

Spain implemented anticyclical provisions in July 2000, to correct the trend of making little provision during boom times and excessive provision during periods of recession[5]. The Bank of Spain designed an anticyclical provisioning fund (known as the *Fondo de Insolvencias Estadísticas*). The purpose of this fund is to provide coverage for the potential risks on total portfolio, which do not necessarily become non-performing loans, and so supplement the general provisions requirement, based on the historical experience of homogeneous risk categories. This statistical provisioning covers the expected losses of the non-deteriorated loan portfolio throughout the whole cycle, as opposed to the specific provisions made to cover the risk of loans that have already deteriorated.

Statistical provisions are calculated by taking the difference between the latent losses and specific provisioning. (Figure 1) To calculate the latent losses you may use internal models to determine, on the basis of an institution's history, the specific provisions-gross portfolio (coefficient α) average ratio throughout

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3 See León (2003) and Bermúdez (2003) for information on SARC.

4 See Fernández de Lis *et al.* (2000) and Poveda (2000) for a description of the statistical provisions.

5 Implemented through Bank of Spain's Circular # 9/1999.

the previous cycle, according to homogeneous risk category, to be multiplied by the current amount subject to exposure. Institutions that have not developed their own internal model should take the exposure coefficients by risk types, which are imposed by the regulator, to calculate the latent losses (standard model). In both cases, it is very important to include historical data for at least one whole economic cycle in order to calculate these (a) coefficients. Therefore, the latent losses of risk category i at time t will be calculated as:

(1) Latent losses $_{it} = a_i \cdot C_{it}$

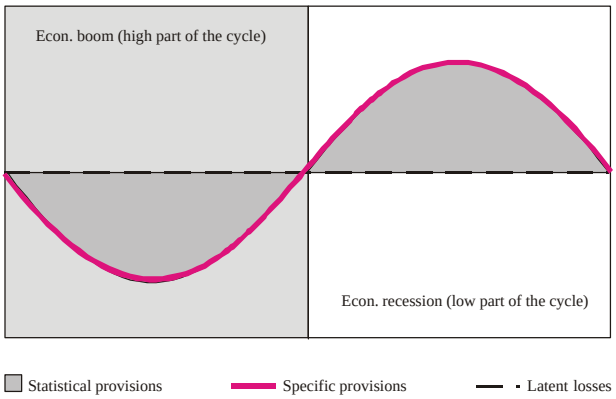
Where:

a_i = $\sum$(Prov $_{i,t}$ / $C_{i,t}$) / n = (quotient average between specific provisions and gross portfolio in risk category i along the previous cycle).

C_{it} = category i portfolio in time t.
i = portfolio categories: mortgage, consumer, and commercial.

FIGURE 1

STATISTICAL, SPECIFIC PROVISIONS, AND LATENT LOSSES RATIO THROUGHOUT THE CYCLE (*)



(*) In order to have constant latent losses, as shown above, we assume that the loan portfolio for category i for the whole cycle does not vary against the average of loam portfolio i of the previous cycle ($C_{i,prom} = C_{it}$), in which case the latent losses will be equal to the average provisions made for risk category i throughout the previous cycle ($Prov_{i,prom}$).

When the difference between the latent losses and specific provision is positive, the amount is registered as an expense in the profit and loss statement (P&L) against an increase in the anticyclical provisioning fund[6]. This usually tends to happen during boom periods, when the level of latent losses is greater than the level of specific provisions (which tend to be small during this part of the cycle). On the other hand, when this difference is negative, the amount of statistical provisioning is registered as an income item in the P&L statement against a decrease in the anticyclical fund. This situation is common during periods of economic recession—when the loan portfolio deteriorates. Here the levels of specific provisions are quite high and so the accumulated funds in the provisioning fund have to be used. Thus, the statistical provisioning offsets the cyclical effect of specific provisions on the P&L statement.

Both the latent losses and, hence, the statistical provisions should be calculated for each of the pre-established homogeneous risk categories. When statistical provisions are positive and funds are added to the fund, these will not be tax-deductible in the P&L statement. They will be tax-deductible only when the statistical provisions are negative.

6 If the latent losses are calculated during a period of one year and statistical provisions are done on a quarterly basis (as in the case of Spain), statistical provisions are then calculated as the difference between a quarter of the latent losses and the quarterly accumulated specific provisions.

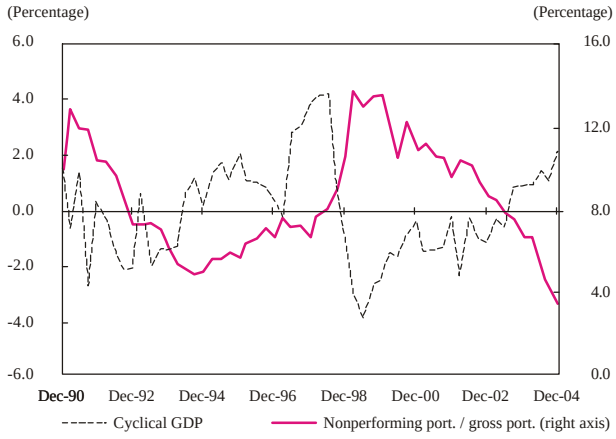
The anticyclical provisioning fund has a ceiling which is based on the latent risk shown throughout the previous cycle. This ceiling is determined under the assumption that the intensity of the next phase of recession will be similar to that of the previous cycle[7]. An institution will not need to make further statistical provisions upon reaching this ceiling. In the case of Spain, this upper limit is equivalent to three times the latent losses per year.

Thus, statistical provisioning is preventive in nature and should only be implemented during economic booms. In effect, the anticyclical provisioning fund should be supplied with funds during these upswing periods.. The benefits of having this fund will be seen during the next cycle; thus, this will serve to balance off the high levels of specific provisioning made during the economic downswing and, during the upturn, agents will not be able to increase their lending without making a higher contribution toward provisioning.

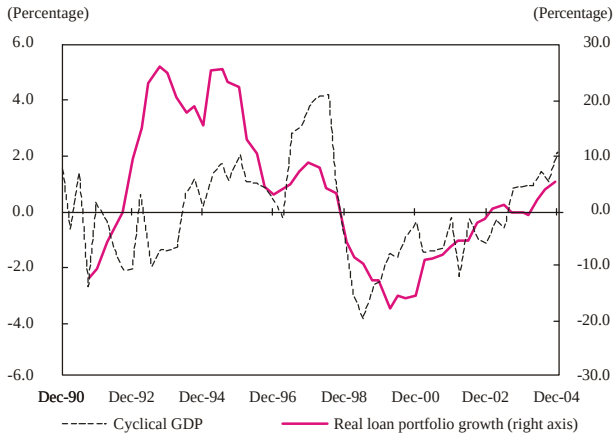
GRAPH 1

CYCLICAL GDP COMPONENT (*)

QUALITY OF LOAN PORTFOLIO



REAL LOAN PORTFOLIO GROWTH



(*) GDP's cyclical component is the difference between the observed and the potential GDP, using the Hodrick-Prescott filter. The quality of the loan portfolio was calculated as the quotient between the non-performing loan portfolio and the gross loan portfolio of bank institutions. The growth of the loan portfolio was calculated as the annual variation of the net loan portfolio of banking institutions.
Source: DANE and Banking Superintendency, and calculations from the authors.

The primary advantage in establishing this type of fund is that it reduces the financial system's procyclical trend while at the same time it promotes a healthy management of exposure and, hence, reduces the system's risk of a financial crisis. To reduce the sensitivity to the cycle is to reduce the volatility of provisions and also its impact on deepening the losses of financial institutions; it not only contributes to lowering public mistrust because of a sound financial system, but also lessens what has been called the *privatization of profits* (during boom times) and *the socialization of losses* (during recessions).

III. THE COLOMBIAN CASE

A. The cycle

In Colombia, particularly during the 1990s, the procyclical character of higher lending levels and loan portfolio quality (loan portfolio and asset quality) was observed. The GDP's growth phase during the 1990s was characterized by a low level of provisions as a percentage of the portfolio. The situation took a turn for the worse from 1998 to 2000, when the portfolio deteriorated rapidly and was reduced in real terms (an effect which lasted until the end of 2002). (Graph 1)

7 If this assumption holds, there will be enough funds in the anticyclical provisioning fund to face the next recession. However, if it is really severe, the fund's resources will not be able to cover the specific provisions that will have to be made.

With the purpose of applying an anticyclical provisioning system, we took a period of 8 years (1994 to 2001), which was consistent with the GDP cycle duration observed for Colombia.[8].

B. The parameters

The aim of this exercise is to estimate the latent losses and the amount of statistical provisions to be applied by the loan institutions. We will carry out a simulation exercise, where we will apply the parameters dating back to 1994 and then determine the impact this system will have both in terms of profits and the indicators of the returns for each year.

From the accounting data provided by loan institutions, we estimated parameter a_i of equation (1) for each of the homogeneous risk categories, i.e., commercial, consumer (including microcredit), and mortgage loans, for the Colombian case. For these categories, we took the average quotients from 1994 to 2001 between specific loan portfolio provisions from the P&L ($Prov_i$) and the gross loan portfolio (C_i). However, the P&L statement's provisions account is not broken down by credit types, therefore specific provisions for category i were estimated as[9]

Spec. Port. $Prov._i$ = (P&L net port. Prov. – general P&L prov.) $^* b_i$

b_i = (Prov. $balance_i$ / $\sum_i$ Prov. $balance_i$)

where the P&L net portfolio provisions are defined as the P&L portfolio provisions less P&L portfolio recoveries. The P&L estimate of general provisions was based on the regulations effective as of August 1999[10].

According to the results of estimating a_i parameters in the case of Colombia, the category with the most latent risk in the previous cycle was that of consumer loan and microcredit with $a_{consumer}$ = 4.2% (Table 1). In other words, for each COP100 in gross portfolio consumption and microfinance, institutions' P&L provisioning was COP4.2 throughout an average year from 1994 to 2001. With regard to the commercial portfolio, the average provisions made for each COP100 came to COP2.3. In both cases, we can observe how

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8 Fernández *et al.* (2000)

9 The P&L provisions were used and not those coming from the balance sheet, since they first directly affect an institution's profits. From an accounting viewpoint, the P&L provisions are not equivalent to the variations of balance sheet provisions, since the latter can decrease because of the duly authorized value penalizations and a reversion in provisions.

10 From this date, institutions had 36 months to make provisions of 1% of its gross portfolio. Hence, the general P&L provisions were:

Between August 1999 and August 2002 ⇒ 1%, *gross port. for Dec,# months from August 1999 / 36 after August 2002* ⇒ 1%, (*gross port. for* $Dec._i$ – *gross port. For* $Dec._{t-1}$).

TABLE 1

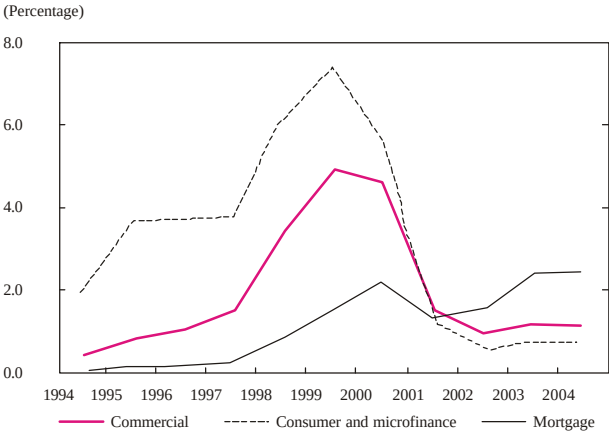
DEVELOPMENT OF PROVISIONING AS A PROPORTION OF THE LOAN PORTFOLIO BY TYPE a_{it} AND a_i

	Dec-94	Dec-95	Dec-96	Dec-97	Dec-98	Dec-99	Dec-00	Dec-01	Dec-02	Dec-03	Dec-04	Average
Commercial	0.5	0.9	1.1	1.5	3.4	5.0	4.7	1.5	1.0	1.2	1.2	2.3
Consumer and microfinance	2.0	3.7	3.7	3.8	6.1	7.5	5.6	1.2	0.6	0.7	0.7	4.2
Mortgage	0.1	0.2	0.2	0.3	0.9	1.6	2.2	1.4	1.6	2.4	2.5	0.9
Total loan portfolio	0.8	1.4	1.4	1.6	3.2	4.4	4.1	1.4	1.1	1.4	1.3	2.3

Source: Banking Superintendency and calculations from the authors.

GRAPH 2

DEVELOPMENT OF PROVISIONING AS A PROPORTION OF THE LOAN PORTFOLIO BY TYPE (a_{it})



Source: Banking Superintendency and calculations from the authors.

each year's provisions/gross portfolio (a_{it}) ratio increased over the 1998 - 2000 period and demonstrates the procyclical aspect of provisioning in the case of Colombia. (Graph 2)

The results from estimating the latent losses for the mortgage portfolio were the lowest for the three types. Bearing in mind that much of the financial sector's crisis worsened because of problems associated with the mortgage portfolio, the reduced a_{mortgage} parameter is a reflection of the regulation on provisions for this type of portfolio[11]. This parameter has two problems: first, its calculation was not based on a complete cycle (the mortgage portfolio has not completed the cycle) as can be seen from the level of P&L provisions between 1994 and 2001 (Graph 2); and second, that it might be overestimated as a result of the securitization of a portion of the mortgage loan portfolio from 2002 to 2004.

C. Simulation exercises

In the first section we will calculate the effect that the introduction of statistical provisions would have on loan profits for the 1994 – 2004 period. In the second, there is a break down of results by loan establishment types, discriminating according to commercial, consumer, and mortgage portfolios.

1. *Comprehensive exercise over the 1994 – 2004 period.* Once we determine a in Table 2, we can simulate what would have happened during the previous cycle if we had applied the anticyclical provisions.

[11] For this type of portfolio a percentage provision of between 1% and 30% is created for the guaranteed part of the loan and 100% over the non-guaranteed part of the loan due to changes in guaranty.

TABLE 2

EFFECT OF ANTICYCLICAL PROVISIONING ON PROFITS

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
In billions of COP											
a. Average gross loan portfolio	17,334	25,282	33,643	42,485	51,273	51,948	48,602	47,148	48,172	51,287	55,560
b. Specific provisions	137	356	474	683	1,629	2,232	2,038	672	519	683	714
c. Latent loss = *a*a* 1/	396	577	768	970	1,170	1,186	1,109	1,076	1,099	1,170	1,268
d. Statistical provisions = *c - b* 2/	259	221	294	286	(459)	(601)	0	404	580	487	554
e. Anticyclical provisioning fund 3/	259	480	774	1,060	601	0	0	404	984	1,471	2,025
Percentage											
f. Statistical provisions / Capital	6.9	4.1	4.0	3.1	(4.7)	(6.9)	0.0	4.4	6.1	4.7	4.6
g. Ut / Pat (observed)	16.6	11.6	11.3	9.0	(17.2)	(33.4)	(20.5)	3.4	9.6	16.8	23.2
h. Ut / Pat adjusted = *g - f*	9.7	7.5	7.3	5.9	(12.5)	(26.5)	(20.5)	(1.1)	3.5	12.1	18.6
i. Statistical provisions / profits	41.4	35.0	35.6	34.2	27.3	20.8	0.0	131.6	63.2	28.1	19.7

1/ *a* = 2.3%, according to Table 1.
2/ When negative, the fund begins to replenish.
3/ It is the statistical provision for the period plus the accumulated of previous periods.

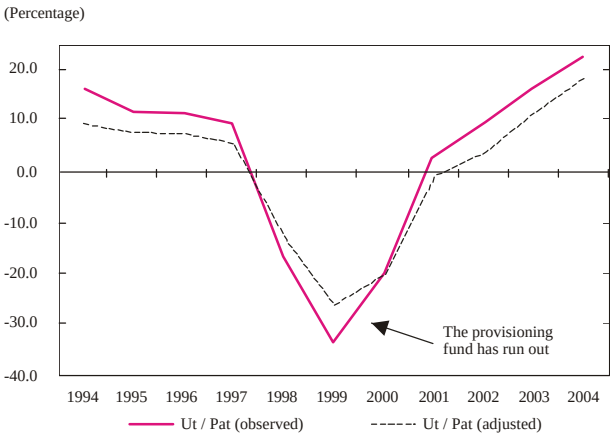
We have shown those results in Table 2, from which we can draw the following:

i. Statistical provisions turn negative from 1998 onwards, hence losses start to fall (they become earnings in the P&L against a decrease in the anticyclical provisioning fund). The provisioning fund however proves insufficient and runs out during the following year (line e). This fact lessens the cushion effect in 1999, which is lost by the year 2000.

ii. This scheme reduces the losses during critical years, on the order of 27% in 1998 (line i), from 17% of the equity (line g) to 13% (line h). For 1999, loss decreases were reduced by 21% and by 0% for the year 2000. (Graph 3)

GRAPH 3

EFFECT OF THE ANTICYCLICAL ADJUSTMENT ON PROFITS



Source: Banking Superintendency, and calculations from the authors.

iii. Statistical provisions consumed sums of above 34% of the profits during the years prior to the crisis. This meant that entities could not avail themselves of their total profits, as more than one third of them would have had to be set aside to cover the risks during the next recessionary phase of the cycle.

iv. The reason why the provisioning fund turned out to be insufficient is as follows, remember that the latent losses of year *t* are

calculated as a*gross portfolio t. Nevertheless, applying a to the 1994 portfolio is not the same as applying it to the 1998 portfolio, whose amount was three times greater. Therefore, the statistical provisions for the first part of the cycle (1994 to 1997) were short in order to balance out the large amount of lending. Thus, the provisioning fund could only cushion adequately if there were no excessive lending.

v. Since booms tend to be accompanied by a high lending portfolio, the a = 2.3% turns out to be underestimated. We therefore have to find an a' that will prevent the provisioning fund from running dry during a crisis. From the simulation we have determined that a' should be 2.8%. These results are shown in Table 3.

From this Table we can see that the anticyclical provisioning scheme reduces the losses for 1998, 1999 and 2000 by about 10%, 29% and 41% respectively. To replenish the fund more than half of the pre-crisis profits should be channeled into it.

Whether a be 2.8% or 2.3%, or even lower, is a consideration that depends on whether the next crisis is going to be as deep as the previous one, and if the cycle will repeat itself once the previous one has ended. There is no objective tool that allows us to make this quantification. An optimistic position held by the authorities could reduce the estimated a for the next cycle to half of what was observed for the previous cycle, as in the case of Spain. The reasons for being optimistic are due to the lessons learned during the past crisis, which have led to stricter regulations on higher provisioning and capital requirements, as well as credit evaluation models, etc. Thus, the scheme starts with an a of 2.3%, a value that will have to be monitored over time, as it will be suscepti-

TABLE 3

THE EFFECT OF ANTICYCLICAL PROVISIONS WITH a = 2.8%

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
In billions of COP											
a. Average gross loan portfolio	17,334	25,282	33,643	42,485	51,273	51,948	48,602	47,148	48,172	51,287	55,560
b. Specific provisions	137	356	474	683	1,629	2,232	2,038	672	519	683	714
c. Latent loss = a*a 1/	484	705	939	1,185	1,431	1,450	1,356	1,316	1,344	1,431	1,550
d. Statistical provisions = c - b 2/	347	350	465	502	(198)	(782)	(682)	644	825	748	836
e. Anticyclical provisioning fund 3/	347	697	1,162	1,664	1,465	683	1	645	1,469	2,217	3,053
Percentage											
f. Statistical provisions / Capital	9.2	6.4	6.4	5.4	(2.0)	(9.0)	(7.6)	7.1	8.6	7.2	6.9
g. Ut / Pat (observed)	16.6	11.6	11.3	9.0	(17.2)	(33.4)	(20.5)	3.4	9.6	16.8	23.2
h. Ut / Pat adjusted = g - f	7.4	5.2	4.9	3.6	(15.2)	(24.4)	(12.8)	(3.7)	1.0	9.5	16.3
i. Statistical provisions / profits	55.5	55.3	56.3	60.0	11.8	27.0	37.3	209.7	89.9	43.1	29.7

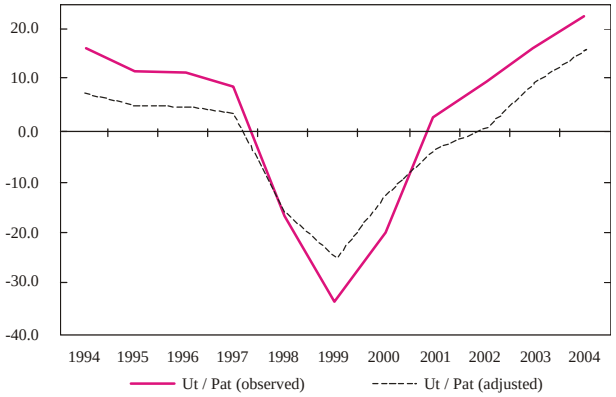
1/ a =2.8%.
2/ When negative, the fund begins to replenish.
3/ It is the statistical provision for the period plus the accumulated of previous periods.

ble to later changes. Further on, some suggestions will be made in order to establish the statistical provisioning scheme to govern the next cycle. (Graph 4)

GRAPH 4

THE EFFECT OF ANTICYCLICAL ADJUSTMENT ON PROFITS, WITH a = 2.8%

(Percentage)



Source: Banking Superintendency and calculations from the authors.

2. *The exercise for 2004 is divided by entity and portfolio type*. Table 1 shows the estimates for a_i in the portfolio for consumer, commercial, and microfinance. With these parameters we are able to construct Table 4, where we can see the burden of statistical provisions on 2004 profits.

The implementation of statistical provisions for the last year would have reduced commercial bank profits by 36% (line 4c), and those of financial corporations (FC) [or investment banks] as well as those of the commercial financing corporations (CFC) [or specialized commercial loan corporations] by 19%. Thus, the banks' equity profitability would have decreased from 26% to 16% (line 4a and 4b), and that of the CFs and CFCs from 16% to 13%.

TABLE 4

CALCULATIONS FOR STATISTICAL PROVISIONS, 2004

	Banks	BECH	CF & CFC
In billions of COP			
1. Commercial loan port. a **= 2.3%**			
a. Gross average loan port.	26,011	4,163	5,184
b. Specific provisions	252	76	65
c. Latent loss	603	96	120
d. Statistical provisions	351	20	55
2. Comsumer and microfinance port. a **= 4.2%**			
a. Ave. gross loan portfolio	8,884	1,861	891
b. Specific provisions	52	18	7
c. Latent loss	374	78	38
d. Statistical provisions	322	60	30
3. Mortgage port. a **=0.9%**			
a. Ave. gross loan portfolio	992	7,572	0
b. Specific provisions	21	227	0
c. Latent loss	9	66	0
d. Statistical provisions	(13)	(161)	0
Percentage			
4. Effect on yield and profits			
a. Ut / Pat (observed)	25.6	23.6	16.5
b. Ut / Pat (adjusted)	16.3	27.2	13.4
c. Statistical provisions / profits	36.3	(14.9)	18.9
5. Transition: yield and profits	0.0	0.0	0.0
a. Ut / Pat (adjusted)	16.2	20.1	13.4
b. Statistical provisions / profits	36.9	14.8	18.9

Source: Banking Superintendency and calculations from the authors.

The specialized mortgage loan banks (or known in Colombia as the BECH) show negative provisioning, as these banks are making provisions for their mortgage portfolio above their historical level (latent losses), and so would not have to make statistical provisioning. On the other hand, hypothetically speaking, should the anticyclical provisioning fund have had sufficient funds, the latter would have made a contribution to the P&L, allowing the BECH to have made profits of above 15% compared to those of 2004.

We should be cautious as to how we interpret this result, as the P&L mortgage portfolio parameter related to gross loan portfolio provisions suffers from the drawbacks mentioned in the previous section.

IV. Implementation scheme

A. Transition mechanism

To have BECH make statistical provisioning, and so follow in the steps of the rest of the financial system, we do well to take advantage at this juncture of their well-to-do P&L and set up a transition mechanism by which the negative component of statistical provisioning (in this case the mortgage component) would not be computed when calculating total statistical provisions (Table 4, line 5b). Thus, only the positive components would be computed (commercial and consumer)—as the sum representing 15% of BECH profits.

We can reach a similar result if we build statistical provisioning funds for each of the homogeneous risk categories. This strategy is particularly useful if we bear in mind that the resulting *a* parameter for the mortgage portfolio is subject to a number of different kinds of problems. Further, it is well worth having separate funds under a scenario where the portfolio cycles are out of phase, as was witnessed between the mortgage portfolio and the remaining categories. This would avoid the use of provisions earmarked to cover one kind of expected losses for a portfolio to help solve the extraordinary provisions of another portfolio type.

B. Size of the fund for provisioning

The size of the fund at the beginning of the recessionary cycle must be sufficiently large to cover the excesses on specific provisions for latent losses during the 4 years of recession. This difference pertains to the shadowed area on the right hand side of Figure 1. We found that it was equivalent to more than 2 times the 1997 latent losses when we quantified said area with an *a* of 2.3% between 1998 and 2001. Thus, the maximum size of the fund would be 2 times the latent losses. Once this level has been reached, there would be no need to make additional statistical provisions. We should note that the general provision of 1% currently required would no longer be necessary as it would be part of the fund anyway.

C. Gradual implementation: a maximum limit on profits

As shown in Table 4, the banks' statistical provisions would consume 36% of their profits. This percentage gives us an idea of the large efforts these banks would have to make to face the next recessionary cycle. The very magnitude of the needed effort by the banks does not make this proposed scheme all that viable. To reduce the impact this would have, we can limit the banks' maximum efforts to 15% of their profits. In other words, if a financial institution is required to make a statistical provisioning of 40% of its profits, it would be allowed to make a minimum provisioning using 15% of their profits.

An additional advantage of the above suggestion is that institutions would make provisions according to their own cycle, which does not always coincide with the general cycles. Thus, if the system is going through a boom and some financial institutions are experiencing losses, the provisioning scheme would not worsen these losses. The scheme actually adapts itself to the particular cycles of institutions. A *proxy* of the aforementioned cycle would be represented by the profit path.

The disadvantage of implementing such a limit is that the period required to replenish the fund is extended. If banks take 2.4 years to complete the fund with an *a* of 2.3% (assuming that the 2004 parameters repeat themselves in the future, and that the 1% requirement in general provisions is part of the fund), it would take 6 years to complete the fund with a limit of 15% over profits.

III. Conclusions and recommendations

From the start of the 1990s expenses on provisions made by the financial system clearly showed a cyclical pattern. These provisions attained their minimum levels during credit boom times giving added dynamism to the portfolio, whereas they became one more obstacle to a recovery in lending during the recessionary phase.

This not only reflects an inappropriate identification of risks by financial institutions but it also promotes perverse behavior, and privatizes profits from risk taking on the upward slope of risk, as well as socializing losses when the financial system becomes vulnerable because of a crisis.

The alternative proposal put forth by this paper is to set up an anticyclical provisioning fund that will take into account portfolio risks at every phase of the cycle. In essence, this scheme entails making contributions when specific provisions (associated with risks that have materialized) are below the mean of the previous cycle, and it also involves making withdrawals from the fund when the provisioning requirements exceed the aforementioned level. As a result, the contribution of provisions in deepening the troughs in the profits cycle would be annulled.

Through the exercises above we were able to determine that for the cycle between 1994 and 2001, the average levels of specific provisions to the gross portfolio came to 2.3%, 4.2% and 0.9% for the commercial, consumer, and mortgage portfolios respectively. This last parameter attracts our attention and may reflect the effect of a structural change on this market's risk conditions, which suggests the information should be treated cautiously.

Since the cushion effect of having an anticyclical provisioning scheme for the profits cycle only works if a reserve is in place before the downswing of the cycle, the scheme needs to be in place during the upward phase of the curve so that there is sufficient time to feed the fund.

Having analyzed the figures on provisioning levels for the commercial and consumer portfolios, it is well worth implementing the scheme as soon as possible because specific provisions are way below the mean of the previous cycle.

However, the effort required by the financial system to implement the scheme is quite large in terms of profits reduction (36% in the case of the commercial banks in 2004). Thus, having a transition system that sets a ceiling on the contributions to the fund may be an alternative. We should note however that any measure toward this aim would limit the cushioning effect that a provisioning scheme would have on the profits cycle.

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