CONFIDENTIAL (FR)
CLASS II

February 2, 1981

TO: Federal Open Market Committee

FROM: John J. Balles

SUBJECT: System Study of New Operating Procedures: Policy Implications of San Francisco Money Market Model

Over the past year our research staff has developed a money market model which has important implications for monetary policy. Some of the results are included in the System staff study of the New Monetary Control procedures dated January 22, 1981. I believe that the results are sufficiently important that I have asked our staff to prepare and distribute a paper in the near future for the review and comment of System economists which details the theory and evidence behind this model. The purpose of this memorandum is to give the FOMC some flavor of the policy implications of this work.

First: The San Francisco model provides evidence, some of it included in the System study, that close monetary control has consequences for interest rate variability which are notably less onerous than generally believed. This point is important, because I believe that our difficulty in keeping the aggregates in their target ranges is more often than not due to concerns that closer control would result in extreme interest rate gyrations.

The reason that conventional models predict large interest rate swings when the supply of reserves changes moderately is that the demand for reserves in these models is derived directly from the public's demand for transactions deposits. Since the public's demand for deposits is not very sensitive to interest rate movements in the short-run, neither is the banks' demand for reserves. As a consequence, these models predict that it takes a very large interest rate change to induce a moderate change in both the public's demand for transaction's deposits and the banks' demand for reserves.

The San Francisco model looks at these relationships from a different perspective. The banks' demand for reserves in this model is based upon the profit maximizing actions of the banks. In seeking to finance their loans in the least costly way, banks adjust offer rates on their managed liabilities. This induces the public to buy more or less managed liabilities from the banks, and in doing so, deposits are affected. These changes in the supply of deposits are the basis for banks' demand for reserves. Since this demand is based in part on banks' behavior, and not solely on the public's behavior, reserves respond relatively strongly to changes in interest rates.

The results presented in the paper by Lindsey et al in the System study indicate that this supply side approach would have been useful in forecasting the monetary aggregates (especially M-1B) in 1980. (The role of the demand for money in the San Francisco model is briefly summarized at the end of this memo.)

Second, the San Francisco model provides evidence that the Special Credit Control Program of 1980 had a great deal to do with the second quarter decline in the aggregates and their third quarter rebound. The link is that the model emphasizes the influence of bank behavior on the money supply, and in doing so, demonstrates the important influence of bank loans on the aggregates. Under the influence of credit controls in the second quarter, bank loans fell sharply, reducing the demand for reserves and the supply of transaction deposits by banks. The make-up borrowing in the third quarter when controls were removed contributed greatly to rapid growth in the aggregates.

The two most important implications of our staff's study are that (1) close monetary control would lead to notably less interest rate variability than is implied by the Board staff's model; and (2) many deviations of the monetary aggregates from targets, which are often attributed to shifts in the money demand function, are instead caused by money supply shocks induced by factors such as bank loans. The first conclusion suggests that we should not let concerns about unacceptably large interest rate variability prevent us from responding aggressively to deviations of the monetary aggregates from target. The second point suggests that we should be less willing to accommodate such deviations, because they often reflect money supply shocks, and not money demand shifts.

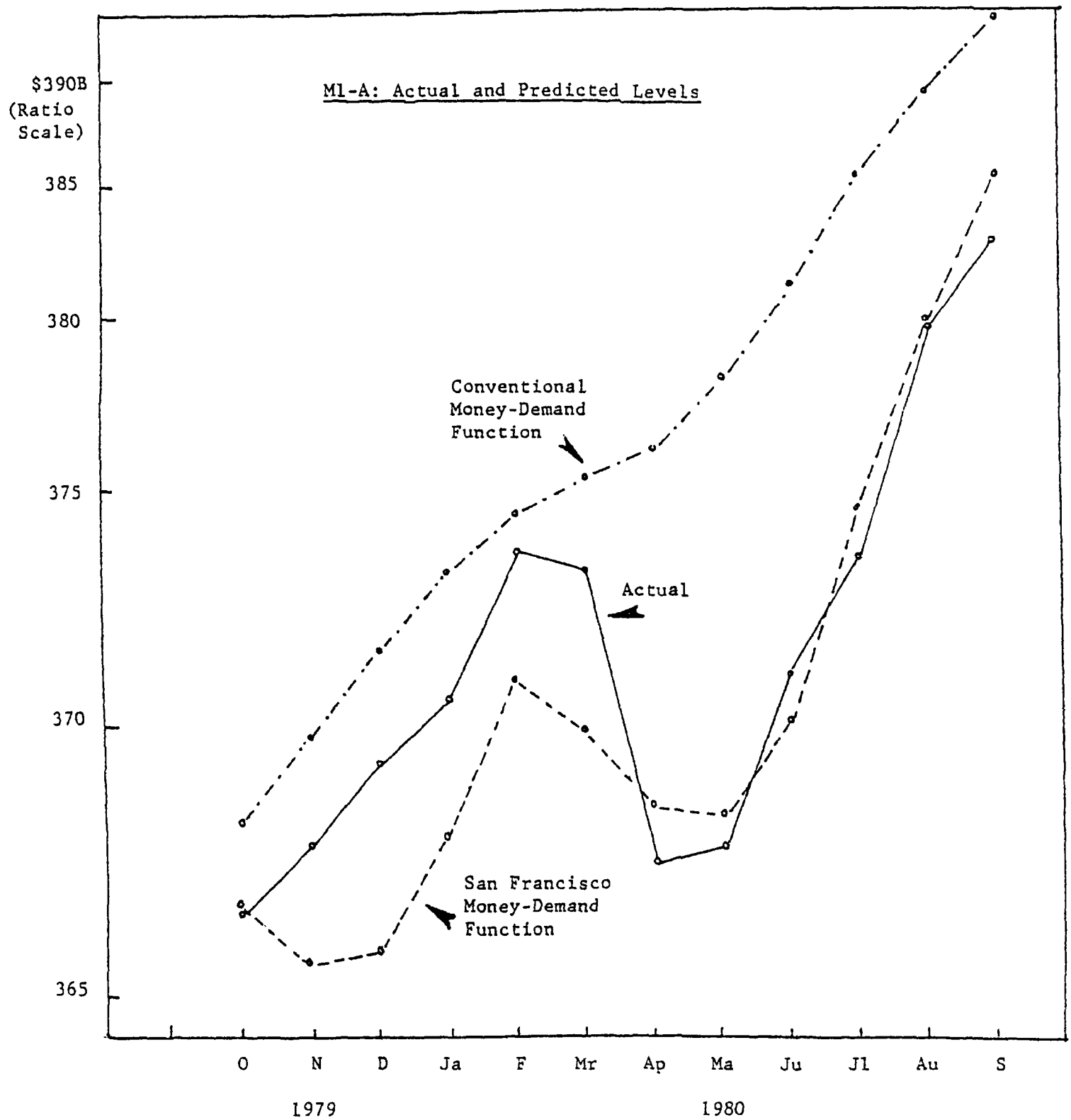
Supplement: Role of Money Demand in San Francisco Model

The above discussion concerns the behavior of the money supply induced by banks' efforts to minimize the costs of servicing their loans. It is natural to ask where the demand for money fits into this model. Money in this model is assumed to be a buffer stock. Thus in the short run, part of changes in money supplied by the banks will be held without the public taking immediate action to get back to their demand curve. The reasons for this are twofold. First, it is costly to take actions to eliminate excess money balances, and therefore both households and corporations will let the balances run down over several days or several weeks. Second, as one household or corporation runs down its cash balances, it will tend to throw other households and corporations off their demand schedule temporarily. The process of the entire private sector getting back to its demand for money schedule will be therefore delayed. It is estimated to take 4 to 6 months.

While this approach to empirically modeling money demand is unconventional, it is based on a long established theoretical literature. Furthermore as indicated in Chart I, the San Francisco approach is superior to the conventional money demand approach in forecasting the actual level of M-1A in 1980. (The same results are presented in rate of change form in Table 1.)

In the San Francisco model, banks are always on the supply curve, with passive short-run adjustment in the demand for money. In the Board of Governors' model (and most conventional models), the public is always on the demand curve, and there is passive adjustment in the supply curve. The important policy implication of this different focus is that when income and interest rates suggest a demand for money which is different from observed money, the San Francisco model would view it as due to the behavior of banks with the public being temporarily off the demand curve. The Board of Governors and other models would treat it as a change in the behavior of the public with respect to money demand which, without any additional information, is assumed to be permanent. By allowing for supply shocks as well as demand shifts, the San Francisco model can in principle indicate when a deviation of money from target should be accommodated and when it should be eliminated.

Chart 1



CLASS III

Table 1
San Francisco Model
Money Demand Simulations
(annualized Rates of Growth)

	Actual M1A	Predicted M1A	Error (Actual M1A minus predicted)	Predicted M1A growth due to movement in		
				Nom. Pers. Income	Interest Rates	Changes in Bank Loans
A. Monthly results						
1979:10	2.3	-2.3	4.6	7.5	-4.5	-5.1
1979:11	4.6	-5.5	10.1	8.2	-4.6	-8.9
1979:12	5.5	0.5	5.0	8.4	-3.7	-4.2
1980:01	3.6	8.7	-5.1	8.4	-2.9	3.2
1980:02	9.4	9.3	0.1	7.6	-2.9	4.7
1980:03	-1.9	-3.2	1.3	7.3	-5.2	-5.3
1980:04	-17.7	-5.0	-12.7	6.1	-3.1	-8.0
1980:05	0.7	-1.0	1.7	5.4	5.9	-12.4
1980:06	11.4	6.5	4.9	5.3	8.1	-6.7
1980:07	7.8	14.4	-6.6	6.6	7.5	0.3
1980:08	19.3	19.0	0.3	6.6	4.9	7.5
1980:09	12.3	16.0	-3.7	6.9	2.1	7.0
B. Quarterly results 4/						
1979:4	4.5	-2.4	6.9	8.0	-4.3	-6.1
1980:1	4.8	4.9	-0.1	7.8	-3.6	0.9
1980:2	-3.9	0.2	-4.1	5.6	3.7	-9.1
1980:3	11.0	16.5	-5.5	6.7	4.9	4.9