Developing a Sound Governance and Institutional Framework

Reserve management objectives and coordination

322. The mission of the Central Bank of Chile (CBCh) is to safeguard the stability of the local currency and the normal functioning of internal and external payments. International reserves provide the CBCh with one of the policy instruments that it has in order to attain its mission. Within the monetary policy framework, based on inflation targeting and a floating exchange rate that it has embraced, the CBCh intervenes in the foreign exchange market in exceptional and qualified circumstances. In addition, the Treasury and private banks are allowed to maintain foreign currency deposits at the central bank.

323. In this context, the basic goals of reserve management are to maintain an appropriate level of liquidity in foreign currency and to protect the value and safety of investments. Subject to constraints derived from the above goals, reserves are managed to obtain maximum return.

324. For liquidity purposes, the CBCh holds a Cash Portfolio in order to meet any intervention needs and also to handle deposits and withdrawals from foreign currency accounts held by the Government Treasury, other public institutions (like Codelco and Banco Estado de Chile), and private banks at the central bank. Regarding foreign exchange interventions, on September 2, 1999, the CBCh announced a free float of its currency.

325. For the remaining balance of reserves not directly devoted to meeting liquidity needs, the following factors are taken into account in determining the way they are managed:

- The CBCh’s foreign debt composition. The CBCh aims to replicate the currency composition and duration of its debt. In this category, any debt denominated in local currency but linked to a foreign currency is also considered.
- The currency composition of liabilities (private and public), in order to back the payment of capital and interest of debt due within twelve months.
- The currency composition of trade imbalances, in order to finance any trade deficits in the event that access to the international credit markets is limited.
- Risks and financial considerations.

326. In considering all of the above aspects, the reserves of the CBCh, from an asset management perspective, can be defined as a multicurrency portfolio invested in products ranging from overnight deposits to bullet bonds with maturities up to thirty years, issued by prime rated countries, agencies, and financial institutions.
327. A small percentage of the reserves are held under the management of external asset managers. This program was started in 1996 as a way to have an additional and real benchmark for comparison and to gain further knowledge of markets and instruments. The asset management program will probably be extended during 2003 to create an externally managed portfolio of mortgage-backed securities.

328. The CBCh manages its international reserves and foreign exchange rate policy, and does not take responsibility for the management of other public funds. Other public institutions are able, nevertheless, to establish time deposits with the CBCh and to maintain current accounts with the Bank as previously mentioned. No special coordination efforts between the CBCh and such public institutions are needed to service said accounts. In fact they are treated as normal liabilities of the CBCh, just as the ones held by commercial banks.

Institutional framework

329. The Constitutional Organic Act of The Central Bank of Chile, Law No. 18,840 of October 10, 1989, establishes that the Central Bank of Chile is an autonomous entity, in terms of the decisions it makes and in terms of the ownership of its capital. The Law establishes explicitly its ability to manage, hold, and dispose of its international reserves.

330. At the central bank, there is a clear setup and separation of responsibilities, which is reflected in the organizational chart attached in Annex I.

331. The decision-making process at different levels of the organization is also clearly defined.

Board level

332. The CBCh’s Board defines the main reserve management objectives and approves the investment parameters articulated in the investment policy guidelines of the central bank.

Division level

333. Acting on behalf of the CBCh’s Board, and under a scheme of delegated responsibilities, the Director of the International Division reviews and approves the quarterly investment strategies with a medium- to long-term perspective, and monitors tactical and strategic decisions made at lower levels of the organization.

Management level

334. The Investment Manager reviews the strategies designed by the front desk and proposes, to the Director of the International Division, the optimal way to implement them. Additionally, the Investment Manager and the front desk may develop and implement tactics that could deviate from the original plan and/or the benchmark, in order to extract value with short-term views on market developments.

Operational level

335. The International Money Desk Department (the front desk): Here the Head of the Money Desk and Portfolio Managers design the quarterly investment strategies and implement the decisions approved at the upper levels of the organization. Using financial tools and techniques, they decide the timing and the security selection in order to achieve the strategic and, at times, tactical allocations.

336. International Treasury Department (the back office): The Treasury Department completes and processes the transactions made by the portfolio managers. This department interacts with the internal accounting systems and sends confirmation messages to all the parties involved. It should be noted that no single transaction can be completed without the authorized signatures of both a portfolio manager and a senior member of the Treasury Department. This department, among other things, also ensures that the Front Desk’s operations comply with internal investment guidelines. This task is carried out by the Operation and Control Unit of the department.

337. Performance and Risk Measurement Department (middle office): This department calculates risk parameters and measures the performance of the portfolio in absolute terms and relative to the benchmark.
Transparency and accountability

338. The Law clearly states the CBCh’s mandate, powers, and accountability. At least three times a year, the CBCh’s Board meets with the Finance Committee of the Senate, and once a year with the plenary of the Senate, to present the state and prospects of the economy and the actions taken by the CBCh to achieve its main objectives. It also prepares audited annual reports, which are available to the public.

339. The CBCh releases periodic disclosures of the reserves’ accounting value on a biweekly basis. It also adheres to the Special Data Dissemination Standard of the IMF. Therefore on a monthly basis (with a time lag), the central bank reports the level of international reserves and foreign currency liquidity, and discloses the end-of-year value of the reserves in its annual report. In the annual report, an accounting measure of the absolute return of the investments is presented and measured in local currency terms. There is also analysis of the composition of returns, i.e., those derived from interest and capital gains and those attributed to variations in the value of the local currency vis-à-vis foreign currencies.

340. The information disclosed about reserve management, such as internal governance procedures and specific investment policies, is regularly under review. In the 2001 Annual Report, new paragraphs were added that describe the way the CBCh achieves the liquidity goal of reserve management. These paragraphs list the types of financial instruments in which reserves are invested and the composition of reserves at year-end (showing the percentage of reserves allocated to two broad categories: bank (time deposits) and fixed income instruments). In the same section of the Report, there is also a discussion of how the CBCh controls credit, market, and operational risks and protects the value and safety of the investments. In order to control credit risk, minimum credit ratings for countries and counterparties are specified. Market risk is managed by diversifying the portfolio of investments among different currencies, instruments, and terms to maturity. Market risk is also measured and controlled by calculating the duration and Value-at-Risk (VaR) of the reserves (the year-end duration and VaR are presented), and operational risks are controlled by a clear separation of functions, responsibilities, and internal controls.

341. The central bank also fully discloses reserve management goals and counterparty transaction rules to market participants. The selection criteria, for both the countries and the counterparties, are objective:

- Country Criteria: Long-term credit risk rating, debt level of the country, and the relative size of the country measured by its Gross Domestic Product.
- Commercial Banks: Long-term credit risk rating and size of the institution measured by its equity.
- Counterparties: Primary dealers and brokerage houses that have their own credit rating within the ranges required by the central bank, or those that are at least 90 percent owned by approved commercial banks.

Internal reporting

342. There are different levels of reporting at the CBCh:

- On a monthly basis, the International Division reports to the Board the absolute and relative performance of the internally and externally managed portfolios compared to their benchmark. These reports also contain different risk measurements, such as duration and Value-at-Risk.
- On a semiannual basis, the International Division reports to the Board the list of issuers and counterparties used in the management of reserves during the reporting period.
- Annually, the International Division reviews the soundness of the current benchmark, and proposes changes if deemed appropriate.
- The Front Desk and the Investment Manager report their operations to the Division Manager in a weekly meeting. This meeting is also used to report credit risk news that may affect margins and eligibility of either countries and/or counterparties (reported
by the middle office) and to decide on specific issues related to the implementation of the investment strategies. For example, there may be a decision to change the timing for a certain investment allocation, or if there are new market developments, there may be a decision to make a tactical deviation from the original plan and/or benchmark.

**Auditing**

343. Different agents constantly audit the management of the reserves:

- On an annual basis, there is an audit by an established independent auditing company, whose observations are included in the central bank’s annual report.

- Internal independent auditors, who do not report to the Director of the International Division, conduct internal audits at least three times a year. The audit process covers all aspects of reserve management, from compliance with the guidelines to broad recommendations about different aspects of the investment process and operations, such as the auditing of the securities lending programs, the physical security inside the dealing room and the treasury department, etc.

- Independent internal auditors, who report directly to the central bank’s Board, also continuously monitor compliance with investment guidelines and the nature of accounting profits and losses. This monitoring process is done on a remote basis through the use of the central bank’s accounting system, which is managed by a separate group, the Management and Development Division.

344. The Operation and Control Unit is part of the Treasury Department and reports to the Head of the Department and to the Investment Manager. This unit is responsible for checking the portfolio managers’ daily compliance with investment guidelines. These checks look for compliance on standard procedures related to financial transactions (such as ensuring that the obtained prices were in line with market levels), issuers, counterparts, and margins. This unit is also responsible for monitoring external asset managers, the securities lending programs, and custodian services.

**Establishing a Capacity to Assess and Manage Risk**

**Policy guidelines**

345. Risk management forms an integral part of the CBCh’s broad policy guidelines for investments. For instance, one of the main objectives of the policy guidelines is to first define the playing field for the investment decisions. The central bank’s Board defines these guidelines and then delegates the responsibility for implementing them to the International Division. These guidelines implicitly incorporate the main objectives of the reserve management and therefore represent the investment philosophy of the fund. This overarching philosophy takes form in the ranges and limits imposed on different types of investments.

346. The policy guidelines can be categorized into the following groups:

**Foreign currency exposure/composition**

347. There are guidelines governing which foreign currencies can be held, their amounts (expressed as a percent of the total portfolio), and margins of deviation from these amounts. The criteria for choosing the currency composition, which was previously presented, takes into account the hedging needs for covering the liabilities of the CBCh, the country’s trade deficit, any short-term external debt servicing needs, and financial considerations derived from the use of financial optimization models. The reserve portfolio has four main currency blocs (U.S. dollar, euro, pound sterling, and Japanese yen) and minor currencies, subject to additional holding restrictions, i.e., exposure limits, which are associated with the main currencies. The process of association of the minor currencies to the main ones rests on the correlation of the historical returns.

**Credit exposure**

348. We define three main sources of credit exposure:
Bank risk

349. Bank exposure, which takes the form of time deposits, current accounts, certificates of deposit, and foreign exchange operations, is managed in two ways:

- The maximum authorized amount of global bank risk is limited to a specific percentage of total reserve assets.
- There are also limits on the time to maturity and amount of investment exposure the Bank can have with any single banking institution. To meet the criteria for counterparty eligibility, banks also must comply with minimum size requirements (measured by their equity) and have a certain long-term debt credit rating.

Sovereign and supranational

350. As previously mentioned, the country risk eligibility depends on the relative size of the country, the level of public debt, and its long-term debt credit rating. Individual maximum exposures are assigned to each country. The supranational exposure is subject to a global maximum limit, while the individual amounts depend on the credit rating of each agency and its size measured by its equity.

Counterparty risk

351. The eligibility of counterparties is also subject to objective parameters. Primary dealers, as well as brokerage houses with approved credit ratings and 90 percent owned subsidiaries of eligible banking institutions, are eligible to be the central bank’s counterparties.

Definition of sub-portfolios

352. According to the degree of immediacy that the funds may be needed, i.e., depending on how transitory or permanent the funds are, we have defined three sub-portfolios:

- **The Cash Management or Liquidity Portfolio**: It consists of overnight and weekend deposits, and is the preferred source of liquidity to face daily demand stemming from withdrawals from accounts held by public and/or commercial banks. The liquidity portfolio can receive/transfer funds from and to a second portfolio (short-term investment portfolio) when its balance is too low or too high.
- **The Short-Term Investment Portfolio (Buffer Portfolio)**: Acting as a buffer for liquidity purposes, this portfolio may receive/transfer funds from and to the liquidity portfolio. It is invested in bank deposits and money market instruments, ranging from a week to twelve-month maturity.
- **The Long-Term Investment Portfolio**: Invested in medium- to long-term instruments, including nominal bullet bonds and inflation-protected securities (U.S. TIPS) with maturities ranging from one year to thirty years. Transfers of funds from the long-term portfolio to the short-term one (and vice versa) are mainly due to financial considerations, although at times it has to absorb excess liquidity or meet liquidity shortages.

353. In general, the strategic investments in and between short- and long-term portfolios are subject to an investment review, which is done at least on a quarterly basis. The resulting investment strategy is based on external forecasts and our expectations of future domestic and foreign financial market developments. The general macroeconomic scenario is provided by the International Analysis Department while the International Money Desk (front desk) forecasts future yield curves and rates of return (the financial scenario). These scenarios and expected values are presented and discussed at meetings chaired by the Director of the International Division and attended by senior staff of the area, in order to achieve a consensus view at the Division level.

354. The expected rates of returns for three- and twelve-month horizons are fed into an optimization model; the results are analyzed and then adjusted according to the market experience of

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our officials. That is particularly the case when using standard, although imperfect, mathematical models that do not take into account the costs of adjustments, and may recommend allocations that are too aggressive or too concentrated in a limited number of assets.

355. The composition of the benchmark for comparison purposes comes from the output of a historical standard mean-variance optimization model, which is subject to a number of ad hoc constraints reflecting the risk-return profile of the central bank. For example, there is a constraint limiting the percentage of assets allocated to maturities greater than three years. This constraint is designed to limit the duration or the market sensitivity of the overall portfolio, thereby preserving the capital of the fund.

356. The reserve benchmark is a tailor-made combination of internationally known indices. For example, we use BIS’s six-month Fix Bis index for the short-term portfolio associated with the short-term sovereign and supranational investments, a Libid index for the banking investments, and sector indices of the JPMorgan Chase global index for the bond portfolios. There is a similar index for each main currency of the portfolio.

357. As mentioned, investment and allocation strategies for the portfolio are reviewed at least on a quarterly basis, but sudden market moves can make the portfolio managers take a position that goes in a different direction than the one recommended by the current strategy. These actions are previously approved by the Investment Manager and communicated to the Director of the Division. By how much can portfolio managers deviate, and what is the net effect of those particular actions are issues that the Division is currently addressing. The Division is also making efforts to better identify the attribution and composition of returns of the overall portfolio.

**Risk management framework**

358. Risk management is approached in four different ways or instances:

*Financial risks (Ex ante measurement)*

359. The primary indicator of financial risk is the portfolio’s duration. For the short- and long-term portfolios, as well as for the overall portfolio (excluding the liquidity portfolio), there are duration benchmarks and predefined margins of deviation from these benchmarks. On an ex ante basis and as unofficial calculations, the portfolio managers calculate the duration, VaR, and tracking errors associated with the strategy for the investment of the reserves. All day-to-day operations and reports of the front and back office are prepared using internally developed systems that are able to interact with the general accounting system of the central bank and with the SWIFT system for international messages. From the moment a portfolio manager closes a trade, approximately 90 percent of the steps needed to complete the transaction are automated. There are still some activities that can be automated. For example, the manual entering of each transaction by back office personnel could be replaced by an automated system, where the portfolio managers directly enter trades into the system. This system upgrade would save time and lower the risk of clerical mistakes. The financial calculations are done using mainly Bloomberg and RiskMetrics.

*Credit risk*

361. The middle office is responsible for monitoring this type of risk. This unit monitors changes in credit ratings and names due to the ever-evolving processes of mergers and acquisitions of banks. According to the changes, the list of approved banking institutions varies, incorporating new
names, taking out others, and changing the maximum individual amounts and maturity of investments with each bank.

**Operational risks**

362. The Operation and Control Unit, which is part of the International Treasury Department, monitors operational risk by checking compliance with the guidelines, in terms of exposure to institutions, approved names and locations of subsidiaries, margins, and internal operational procedures established for financial transactions. The control conducted by this unit is mainly manual and done on a spot check basis over a random sample of operations. Because no software system has been developed yet and because these activities also apply to the external asset managers, there is a considerable workload in regard to the management of operational risk, and a related need for automated processes.

**Performance evaluation**

363. The official performance calculation done for internal purposes is the responsibility of the middle office. It issues a monthly report with a time lag that contains the accounting and marked-to-market returns of the investment portfolios managed internally and externally. An extensive effort has been made to reduce the time lag between the reporting date and the month that is being reported. The performance report includes the monthly return and rolling twelve-month returns for all the portfolios and managers (internal and external asset managers), and ranks managers by their performance. There is also a discussion of other topics, such as the duration of the portfolio, VaR, and financial developments during the reporting period.

**Recent developments**

364. In this section we highlight the most relevant developments and actions taken by the area:

**Range of products**

365. In an effort to increase the returns on reserves, the CBCh is about to expand the range of products eligible for investment. This project specifically is considering the incorporation of U.S. Agencies (GSEs), German Pfandbriefs, and mortgage-backed securities.

**Securities lending**

366. Yield-enhancing activities such as a U.S. dollar securities lending program have been in place since July 20, 1998. The program was subsequently extended to euro-denominated notes and bonds on May 10, 2000, to the portfolios held by the external asset managers on April 9, 2001, and to the portfolio of assets held in pounds sterling on October 26, 2001.

**External consulting**

367. Another interesting initiative that we recently began was to rely on external consultants for advice and recommendations to the entire investment area. This is a requirement of the CBCh’s Board, and so far, two external consultancies have been used in the last four years. They have been helpful in ensuring soundness of actual procedures within the area and identifying areas where improvements could be made. The creation of the Operation and Control Unit in 1999 is one of the results of these external consultancies, as well as some of the current observations to our area that are actually included in this document. The external consultants were senior staff members of prestigious institutions in the reserve management arena. Through these exchanges the investment area has the opportunity to learn from the experience of more developed operations, and from central bank partners (or supranational institutions) that do not view consulting as a business, but rather as a collaborative effort aimed at developing institutions with similar goals and levels of capacity.
Annex I: Organizational Chart: Central Bank of Chile and the International Division Area

Board of Governors

General Management

Research Division

International Division

Management and Development Division

Financial Policy Division

International Financial Operations and Analysis Management

General Auditing Management

International Investment Management

Foreign Trade and Commercial Policy Management

Performance and Risk Measurement Department

International Money Desk Department

International Treasury Department

Head of Department + 5 Analysts

Head of Department + 6 Portfolio Managers

Back Office 8 Analysts

Operation and Control 4 Analysts

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