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**Deloitte Touche
Tohmatsu**



***Consulting Services to
Ceskoslovenska Obchodni
Banka, A.S.***

Work Plan

Delivery Order No. 31

*Contract No. EUR-0014-I-00-1056-00
Eastern Europe Enterprise Restructuring and
Privatization Project*



*U.S. Agency for International Development
EUR/RME*

December 1, 1994

**Deloitte Touche
Tohmatsu
International**

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Ceskoslovenska Obchodni Banka (CSOB) Workplan

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Signed workplan approvals

Memo setting out terms of reference

Draft plan -- Internal Audit Project

Function A -- Treasury & Foreign Exchange

Function B -- Workplan for the Strengthening of the Problem Loan Department

Function C -- Internal Audit

OPTIONAL FORM NO. 10

FAX TRANSMITTAL

FORM NO. 10

4-31

To: ADRIENNE BROMBAUGH
From: JEN K. ZER
Fax # 202-647-9136

Fax # 202-647-6791

**Deloitte Touche
Tohmatsu**



ICA Group Ltd.
1001 Pennsylvania Avenue, N.W.
Suite 350N
Washington, DC 20004-2594, USA

October 5, 1994

Lawrence Camp
USAID - ENI/PER/EP
320 21st Street, N.W.
Washington, D.C. 20523

Re: Contract No. EUR-0014-I-00-1056-00, Delivery Order No. 31,
Ceskoslovenska Obchodni Banka (CSOB) - Draft Workplan

Dear Lawrence:

As required by Article IV of the above-referenced delivery order, we are submitting for your approval the attached draft workplan for technical assistance to the problem loan department of CSOB. If this workplan is acceptable, please indicate your approval by signing below and returning a copy to us via fax for files. If you have any questions regarding this request, please call Adrienne Brombaugh at (202)879-5650.

Sincerely,

Lizann Grosser
Senior Manager
Central & Eastern Europe

Lawrence Camp/Concur

10/07/94
Date

(With addition of 'process manual as delineated in letter to Ram Farner of same date.)

**Deloitte Touche
Tohmatsu
International**



U.S. AGENCY FOR
INTERNATIONAL
DEVELOPMENT

October 6, 1994

Ran Farmer
Deloitte & Touche
Prague, Czech Republic

VIA FAX

Dear Ran,

I have reviewed the work plan for the 'Strengthening of the Problem Loan Department' function of the CSOB project. It is an excellent job and I appreciate the attention and thought which obviously went into it.

I agree in virtually all respects, but there is one task which I am not sure is proposed. Although I know that it is always dangerous to suggest 'formulaic' approaches, it was my intent in Task 3 that a sort of work book or process manual be developed that can be left behind to provide a general but practical guide to how problem loans should be handled: not the aggregate portfolio, but specific problem loans as they surface. This may be as simple as a two or three page flow chart or identification of steps.

Please call if you have any questions. Hope to come out the visit the project at the end of October or early November. Again, it was a great job.

Yours truly,

A handwritten signature in black ink, appearing to be "Lawrence Camp". The signature is stylized and somewhat cursive.

Lawrence Camp

cc: Prosser
Rogers, Frinta

Deloitte Touche Tohmatsu



Deloitte Touche Tohmatsu
ILA Group Ltd.
1001 Pennsylvania Avenue, N.W.
Suite 350N
Washington, DC 20004-2594, USA

Telephone: (202) 879-5600
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October 12, 1994

Lawrence Camp
USAID - ENI/PER/EP
320 21st Street, N.W.
Washington, D.C. 20523

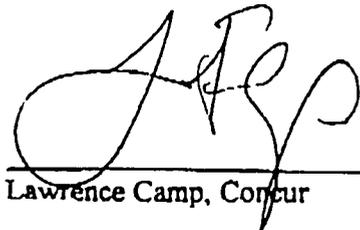
**Re: Contract No. EUR-0014-I-00-1056-00, Delivery Order No. 31,
Ceskoslovenska Obchodni Banka (CSOB) - Draft Workplans**

Dear Lawrence:

As required by Article IV of the above-referenced delivery order, we are submitting for your approval the attached draft workplans for technical assistance to the Treasury Department (Function A) and the Internal Audit Department (Function C) of CSOB. If these workplans are acceptable, please indicate your approval by signing below and returning a copy to us via fax for files. With your approval last week of the workplan for the Problem Loan Department (Function B), the remaining workplan to be submitted is for the revised tasks described in the recent modification to the scope of work. If you have any questions regarding this request, please call me at (202)879-5650.

Sincerely,


Adrienne Brombaugh
Consultant



Lawrence Camp, Concur

11/30/94
Date

**Deloitte Touche
Tohmatsu
International**

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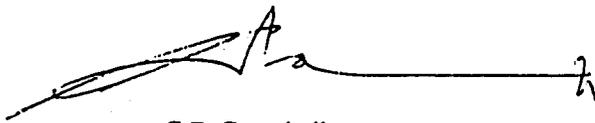
MEMORANDUM

To: P. Kavanek
J. Tauber
R. Somol
R. Gross
R. Farmer

From: C. R. Grumball

Re: The provision of technical assistance to Ceskoslovenska Obchodni
Banka AS.

The attached paper sets out my terms of reference for the provision of technical assistance in the area of treasury and foreign exchange management to CSOB. I welcome your comments on its contents as soon as possible so that it may be formally submitted to USAID.

A handwritten signature in black ink, consisting of a stylized 'C' and 'R' followed by a horizontal line that ends in a small flourish.

C.R. Grumball

Short-term technical assistance to the Ceskoslovenska Obchodni Banka AS ["CSOB"] in the area of treasury and foreign exchange management.

The purpose of this paper is to set out revised terms of reference for the provision of technical assistance in the area of treasury and foreign exchange management to CSOB. It is written following discussions in the bank which have focused on CSOB's immediate priorities within the time frame and budget of the current project.

Appropriate timings are shown in the attached timetable.

Task 1. Develop a risk management techniques paper.

1.1. Review and report on existing foreign exchange and treasury policies and procedures.

The review of the bank's current operating processes will be considered under five categories:

- Credit Risk
- Operations Risk
- Liquidity Risk
- Market Risk
- Human Risk

A report will be submitted which will identify weaknesses and make recommendations on managing the areas stated above more effectively.

1.2. Prepare and present a paper on the establishment of improved risk management techniques.

In addition to the report mentioned in 1.1. above, a paper will be presented that will recommend better methods to be adopted by the bank which will enable the senior management to measure and control the treasury risks of the bank more effectively.

The paper will explain the various methods currently used in the market to control risk, with specific references to their strengths and weaknesses and appropriateness to CSOB.

Task 2. Implement proposed risk management techniques.

2.1. Advise on the incorporation of the proposed risk management technique into the MIS.

Advice will be given on the implementation of the proposed risk management techniques into the bank's MIS.

2.2. Provide training to staff relating to the proposed risk management techniques.

Training will be provided on the proposed risk management techniques. This training will consist of on the job training and tutorials / seminars which will be available to all relevant personnel. Time permitting this may be expanded using computer based material.

Task 3. Review Valuta for ability to meet risk management requirements.

An extensive review will be made of the Valuta test system proposed to be installed in CSOB during the pre-contract specification phase of the FEDS project. The review will focus specifically on the capability of the system to meet the needs of senior management over and above the day to day needs of the dealers.

Task 4. Assist with FEDS contract negotiations.

4.1. Assist with preparation of a detailed specification of the exact needs of CSOB in liaison with the preferred supplier.

Detailed advice will be given on the specification requirements for the implementation of the Risk Management techniques to be adopted by CSOB.

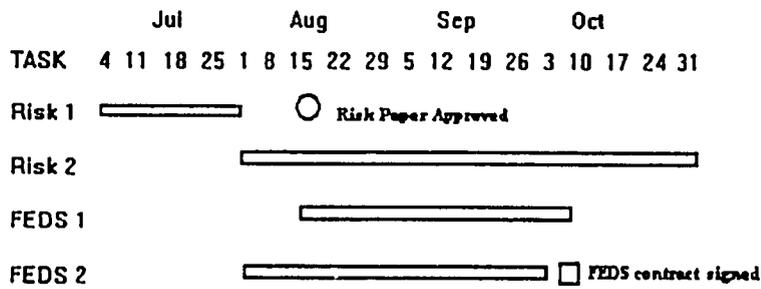
4.2. Assist with preparation of a detailed implementation plan.

Detailed advice will be given on the preparation of a detailed implementation plan to ensure that the requirements of CSOB are capable of being met within the proposed time and budget.

Timetable

TASK

- Risk 1 Develop Risk Management Techniques Paper**
- Risk 2 Implement Risk Paper to include training / seminars etc.**
- FEDS 1 Review Valuta for ability to meet risk management requirements.**
- FEDS 2 Assist with contract negotiations.**



9/23/97/1057

Deloitte & Touche



Deloitte & Touche
Týnská 12/633
110 00 PRAHA 1
Czech Republic

Fax Transmission

To: Mr. Lawrence Camp	Office: USAID
Fax Number: 001 202 647 67 91	
Comments:	

Dear Lawrence:

Following is a draft of the detailed work plan prepared by Clive Grumball for the treasury and FX component of the CSOB project. This work plan represents the first deliverable product under the terms of reference described in Delivery Order number 31.

Similar work plans will be prepared by each of the specialists once they begin work on the project.

I will be on vacation until the week of July 18. If you have questions or would like to discuss the work plan, please feel free to contact Clive either through CSOB or at our office in Prague.

Also for your information, Clive, Tomáš Horáček and I met with Zdeněk Frinta at USAID Prague on June 27 to discuss the project. I gave him a copy of my most recent letter to you describing the planned start dates for each of the remaining specialists and informed him that we have requested travel clearance from you according this plan. The next specialist to arrive will be Mr. Stephen Alison on July 12,

Best regards,	Ran Farmer
From: R. Farmer, MC	Office: Deloitte & Touche, Prague
Fax Number: (42-2)-232 57 00	Number of Pages (including this one): 12
Date: July 1, 1994	To confirm receipt, or if you do not receive all pages, please call: (42-2)-248 11 456

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From: Clive Grumball

Date: 27 June 1994

Re: Short-term technical assistance to the Ceskoslovenska Obchodni Banka AS ["CSOB"] in the area of treasury and foreign exchange management.

The purpose of this paper is to set out the terms of reference for the provision of technical assistance in the area of treasury and foreign exchange management to the CSOB. It is written following a brief period already spent with the bank.

Most of this time has been spent attending a series of system demonstrations given by their two current preferred suppliers in Prague, Aachen, Amsterdam, London, and High Wycombe. I have not been able to focus as much as I would have liked on CSOB management's attitude towards the foreign exchange and treasury activity within the bank, their attitude to risk taking, and the concomitant risk management techniques currently [or likely to be] adopted by them to ensure their objectives are met. This is somewhat unfortunate since such considerations would normally form the basis for the ultimate choice of system.

As I understand it the pressure for the installation of the FEDS is coming from the treasury/dealing areas rather than from the bank's senior management. This situation may be highly laudable but, from my experience, such a matter should be driven by management or by management/treasury/dealers jointly if it is to be truly successful.

A meeting is due to be held this Thursday [30 June] to decide on the future course of action to be taken regarding the FEDS. The outcome of this meeting is highly relevant to my involvement with the bank and will to some extent dictate my terms of reference. What limited experience I have of the personnel involved suggests that a decision on the supplier will be taken and this paper is submitted on this basis.

It has been possible for me to gain some insight into the modus operandum of the treasury area, albeit less extensive than I would have liked. Whilst it is clear the bank is experienced in some areas of treasury activity there are indications of serious deficiencies in their risk management capabilities, although I would need more time to confirm or allay my fears in this matter. My understanding is that my role was to fall under the following headings:

1. To review existing foreign exchange and treasury policies and procedures and assist in the establishment of improved risk management techniques, policies and procedures.
2. To assist with the selection of a Front End Dealing System [FEDS].
3. To monitor the installation of the selected FEDS.
4. To provide training to CSOB Staff.

The problem is that I believe that CSOB's needs will extend beyond the current project life. For example, I have been directly involved with the installation of three separate front end dealing systems in [without wishing to appear disrespectful to CSOB] mature treasury/dealing rooms, none of which took less than 9 months from the initial decision being taken.

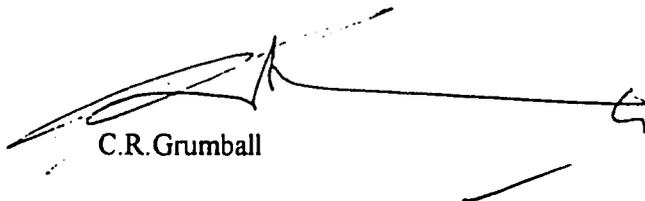
In CSOB's case the matter is further exacerbated by virtue of the fact that neither system under consideration can currently meet existing requirements let alone any planned expansion of activities. In the case of one system these products will not be available before the end of this year, and in the case of the other they will not be available before end 1Q1995.

Even then the software in each case will probably have only passed the beta test stage. This may well result in further delays until end 1Q1995 in the case of the former or end 2Q1995 in the case of the latter to clean the system, before final acceptance by the bank.

I also believe that the bank will require considerable assistance in specifying its exact requirements to the chosen supplier, and the drawing up of an effective implementation schedule. It is reasonably clear what the dealers are looking for in terms of deal capture and profit reporting, but I believe that help will be needed in specifying effective risk assessment and risk management reporting techniques, particularly since this is an area which is addressed without real conviction by one of the two systems seen.

The overriding consideration for the project must be to ensure the most effective FEDS is implemented, or at least is well under way, within the allocated time for the project. The reason for this is that, realistically, without it the bank should not involve itself in any activity beyond the most straightforward and manageable [i.e. spot foreign exchange and very short term money market]. This is specially important given the ongoing problems being experienced in the bank's back office system.

Nevertheless, this will not negate the need in due course for the bank to address the areas incorporated in the Appendices to this note which detail each of the 4 task areas mentioned above, since they will be crucial to the bank's future ambitions and well being. I also attach a draft implementation plan for a typical basic FEDS which supports my earlier supposition. I have highlighted those areas where I believe my input is critical.


C.R. Grumball

Appendix 1 Task 1

- 1. Review existing foreign exchange and treasury policies and procedures and assist in the establishment of improved risk management techniques, policies and procedures.**

1.1 Review format

The review will be considered under five categories:

Credit Risk

Operations Risk

Liquidity Risk

Market Risk

Human Risk

1.2 Credit Risk:

Investigate:

- 1.2.1** The procedures in place to establish and maintain and observe credit limits for Treasury counterparties.
- 1.2.2** The procedures for identifying and reporting any changes in the market's perception of the credit standing of any given counterparty immediately it becomes apparent to the dealers.
- 1.2.3** The procedures when Treasury takes a unilateral decision to cease trading with a given counterparty if deemed necessary [on the basis that the dealers are often the first line of defence for a bank's credit committee].
- 1.2.4** Procedures for breaches of limits.

1.3 Operations Risk:

Investigate

- 1.3.1** Whether adequate procedures are in place to ensure undue losses are avoided which result from dealers failing to complete deal tickets/input deals accurately etc.

- 1.3.2 Any procedures for sub allocation of losses resulting from dealer or back office administration errors.

1.4 Liquidity Risk.

Investigate

1.4.1. Structure of Deposit Base

In particular there should be:-

1.4.1.1. A clear funding strategy

1.4.1.2. A detailed analysis of the deposit structure broken down by depositor category. i.e. Interbank; Other Institutional; Call and Time Deposits; and Currencies

1.4.1.3. Detail on whether dependency on a few depositors to provide the bulk of funding needs exists and steps to be taken to avoid such situations.

1.4.1.4. To ensure that the Treasury Manager and his Management have sufficient and timely information on the deposit base. In the case of the Treasury Manager this will need to be detailed.

1.4.2 Quality of Assets:

Investigate

1.4.2.1 CSOB's deposit placing strategy.

1.4.2.2. Whether any concentration of deposit placement on any one counterparty or counterparty group exists (There is a real need to diversify risk).

1.4.2.3. The policy on holding a stock of high quality liquid assets.

1.4.2.4. The extent of any implications resulting from providing commitments (i.e. stand-by facilities) and guarantees to customers.

1.4.2.5. The holdings of marketable securities with specific reference to identifying volatile or thinly traded sectors (i.e. forced sale risk).

1.4.2.6. The policy towards limiting any intergroup or interbranch lending.

1.4.2.7. Any provision of a realistic assessment of the cash flows resulting from the loan book.

1.4.3 Contingency Plans.

Investigate:

- 1.4.3.1. The availability of standby lines to CSOB, both in normal market conditions and in a disaster scenario with specific reference to any adverse change clauses contained within a facility agreement.
- 1.4.3.2. Access to funding from within the CSOB group and consideration of whether any constraints exist.
- 1.4.3.3. Administrative action required in the event of a crisis. i.e. Availability of senior management; increased management information; increased monitoring; and monitoring and reporting
- 1.4.3.4. Whether any existing liquidity policy procedures address:
 - 1.4.3.4.1. The type and frequency of management reports.
 - 1.4.3.4.2. The nature and extent of reporting by the branches. In particular the issue of frequency and level of automation needs to be considered.
 - 1.4.3.4.3. The suitability of CSOB's systems to report liquidity risk on a basis which is consistent with policy.

1.5 Market Risk

Broadly speaking, this falls into three categories:-

Position Risk: This is described as being an institution's exposure to loss, measured in base currency, due to adverse movements in rates. Position risk can take the form of interest rate or exchange rate risk.

Basis Risk: Basis risk arises in many forms and is present to the extent that changes in rates are not constant across all instruments. Essentially it represents the idiosyncratic risks associated with one product related to another / others when utilised in a given market scenario. E.g. A commercial loan which is priced against (say) US Prime Rate but funded in the Eurodollar market and priced against LIBOR presents a basis risk.

Volume Risk: This risk is related to the total business volume or activity in a particular product area. The risk arises because the various trading desks may acquire a large number of positions, the cumulative effect of which under adverse conditions could result in a strain on liquidity or mounting losses due to unexpected changes in rates.

Investigate:

- 1.5.1 The extent to which each of the above risks is addressed by the existing limit structures and - more importantly - systems capabilities.
- 1.5.2 CSOB's tolerance to risk.
- 1.5.3 The extent to which CSOB Senior Management has set a series of primary risk objectives. [e.g. It is the objective to be interest risk neutral such that the value of CSOB's assets will be equal to its liabilities regardless of changes in interest rates etc.].
- 1.5.4 Whether any secondary risk objectives have been established [which may take into account such things as basis risk; liquidity risk; credit exposure].
- 1.5.5 Whether any tertiary risk objectives might be set in line with the historical behaviour patterns of the markets.
- 1.5.6 The method(s) by which CSOB's exposure is indicated and controlled.
- 1.5.8 Procedures for breaches of limits.

1.6 Human Risk

Investigate

- 1.6.1 Dealing Room Procedures Manual
- 1.6.2 Availability of training.
- 1.6.3 Existence of Trainee programme.

Appendix 2 Task 2

- 2 Assist in selection of Front End Dealing System [FEDS].**
- 2.1 Survey of the bank's front end dealing needs and ensure that all of the bank's current and likely future requirements are understood.
- 2.2 Carry out a detailed investigation of current and proposed activity in the following markets
 - 2.2.1 Foreign Exchange
 - 2.2.1.1 Spot
 - 2.2.1.2 Forward
 - 2.2.1.3 Options
 - 2.2.2 Bullion
 - 2.2.3. Money Markets
 - 2.2.3.1. Loans and Deposits
 - 2.2.3.2. Fiduciary Deposits
 - 2.2.3.3. Negotiable Instruments
 - 2.2.4. Derivatives
 - 2.2.4.1. FRAs
 - 2.2.4.2. Financial Futures
 - 2.2.4.3 Interest Rate and Cross Currency Swaps
 - 2.2.5 Arbitrage
 - 2.2.5.1 Cross currency
 - 2.2.5.2 Cross market
- 2.3. Review existing front end dealing systems in the light of bank needs.
- 2.4. Advise on decision to purchase or develop internally a system to meet those needs post visits to Aachen, Amsterdam, London, High Wycombe.

Appendix 3 Task 3

3. Monitor installation of FEDS.

- 3.1. Assist with preparation of a detailed specification of the exact needs of CSOB in liaison with the preferred supplier. This may well need to be a separate project conducted by a team of specialists.
- 3.2. Assist with preparation of detailed implementation plan.
- 3.3. Monitor installation of system.
- 3.4. Advise on all stages of testing of the system as it is installed.
- 3.5. Undergo training on system with the view to provide training to CSOB staff.
- 3.6. Monitor and advise on integration into the MIS.
- 3.7. Provide training to staff on the system.

Appendix 4 Task 4

- 4. Provide training to Bank staff.**
- 4.1. Provide training on theory and practice of treasury and foreign exchange management through on the job training and seminars as requested.
- 4.2. Co-ordinate with Project Officer (USAID) on availability and appropriateness of outside training.

Appendix 5 Suggested Systems Implementation Plan.

Assumption: CSOB Board approve the acquisition of a FEDS from 1 August 1994.

Phase		Task	Duration	Phase end date
1	**	High level planning	2 weeks	15 Aug 1994
2	*	FX analysis	4 weeks	12 Sep 1994
3		Basic Test System Available		12 Sep 1994
4	*	Configure Spot FX	5 weeks	17 Oct 1994
5	**	Test and train Spot FX	2 weeks	31 Oct 1994
6		Spot FX live		31 Oct 1994
7	*	Configure Forward FX	4 weeks	28 Nov 1994
8	**	Test and train Fwd FX	2 weeks	12 Dec 1994
9		Forward FX live		12 Dec 1994
10	*	Money market analysis	6 weeks	23 Jan 1995
11	*	Configure money market	6 weeks	06 Mar 1995
12	**	Test and train money mkt	2 weeks	20 Mar 1995
13		Money market live		20 Mar 1995
14	*	Derivatives analysis	6 weeks	01 May 1995
15	*	Configure derivatives	6 weeks	12 June 1995
16	**	Test and train derivatives	2 weeks	26 June 1995
17		System live		26 June 1995

Some savings may be possible by combining the spot and forward foreign exchange modules but this will mean postponing the spot foreign exchange live date.

* These are phases where ideally I should be involved throughout but where I could maintain a watching brief [say 2-3 days per week of the phase].

** These are phases where my full time involvement is critical.

Appendix 6 Project Implementation Schedule

Phase	Task	Duration	Phase end date
1	Implement Task 1	5 weeks	1 August 1994
2	Deliver Risk Report		1 August 1994
3	Implement Task 2 to Phase 6 Appendix 5	13 weeks	31 Oct 1994
4	Provide Training as required	Ongoing	

Thus, by the end of the current period of the project [approx 100 days] :

1. A review of the existing foreign exchange and treasury policies and procedures will have been completed and reported upon.
2. A recommendation for the establishment of improved risk management techniques, policies and procedures for consideration by the bank will have been submitted.
3. The FEDS should have been installed with the capability of at least providing control over the bank's spot foreign exchange activities.

Ceskoslovenska Obchodni Banka A.S.

DRAFT PLAN
INTERNAL AUDIT PROJECT

Deloitte & Touche, Czech & Slovak Republics

July 1994

INTERNAL AUDIT PROJECT

		Estimated Timing
Phase I	♦ Fact Finding & Familiarisation; Overview of & Familiarisation with the Bank's Business Activities and Automated Systems including IBIS; Overview of the Structure & Organisation of the Internal Audit Department, Audit Plan, Personnel & Procedures; Report Preparation	12-15 Man Days
Phase II	♦ Recommendations for Internal Audit - Plan, Structure etc.	10-15 Man days
Phase III	♦ Development of Practical & Customised Audit Procedures covering, as a minimum, the principal business activities of the Bank	
Phase IV	♦ Implementation of Audit Plan	
Phase V	♦ Identify Skills Requirements & Training needs for Internal Audit Department	3-5 Man days
Phase VI	♦ Staff Training for Internal Audit	
Phase VII	♦ Optimise Use of Audit Trailing facilities available from the computerised accounting system(s) including IBIS	15-20 Man Days
Phase VIII	♦ Development of New Product Process	3-5 Man Days
TOTAL		

INTERNAL AUDIT PROJECT

PHASE I:

- Fact Finding & Familiarisation including obtaining an understanding of :
 - the Bank's Automated Accounting Systems;
 - Internal Audit Department's Structure & Plan
 - Current & Planned Business Activities

➤ OBJECTIVE:

*BUILD AN AUDIT & RISK PROFILE
OF THE BANK*

INTERNAL AUDIT PROJECT

PHASE II:

- Recommend and Develop an Effective Audit Plan & Programme for the Bank's Internal Audit Department.

➤ DELIVERABLE(S):

- *an Audit Plan which, in the first instance, is balance-sheet and P & L related*
- *an Audit Plan which is based on Risk Assessment & Analysis and is tailored to meet the Risk Sensitivities of the Bank's current and planned business activities*
- *an Audit Plan which is flexible to meet a changing environment and one that can respond to special situations as they arise*
- *an Audit Plan which meets the needs of Senior Management and the Supervisory Board*
- *an Audit Plan which is best banking practice and meets generally accepted International Auditing Standards*
- *an effective and professional Audit Programme which will eventually enable the external auditors to reduce the extent of their auditing, place more reliance on the work of the Internal Auditing Division and thus enable the Bank to reduce External Audit Fees*

INTERNAL AUDIT PROJECT

PHASE III:

- Develop Customised and Practical Audit Procedures which are applicable and sensitised to the underlying risks in the Bank's Business Activities

The *main focus* will be:

1. *audit objectives;*
2. *balance sheet & statement of P & L related i.e. each audit includes an element of trial balancing and proof of the prime accounting records;*
3. *all risks assessed and covered;*
4. *effective internal controls are in place and are operative;*
5. *all transactions are approved prior to booking;*
6. *all transactions are booked & booked correctly;*
7. *all income received and booked to the accounts;*
8. *continuous review of the computerised accounting systems in use;*
9. *verification that operating staff are familiar with their jobs;*
10. *compliance with Bank Policy & Directives;*
11. *compliance with the Rules & Regulations of the Czech & Slovak Republics;*

INTERNAL AUDIT PROJECT

➤ **DELIVERABLE(S):** *AUDIT PROCEDURES COVERING THE FOLLOWING AREAS/BUSINESS ACTIVITIES*

- ♦ *Accounting & General Ledger*
- ♦ *Foreign Exchange & Money Market (include. FRAs, Currency Options)*
- ♦ *Funding Risks (Exposure to Interest Risks)*
- ♦ *Securities & Investments Activities*
- ♦ *Loans & Advances (Credit)*
Bills of Exchange
Bills Discounted
Letters of Credit
Guarantees Issued
- ♦ *Cash Area & Vault*
- ♦ *Nostro Accounts Reconciliations*
- ♦ *Internal Accounts Reconciliations*
- ♦ *Fixed Assets*
- ♦ *Retail Banking (Demand Deposit Accounts)*
- ♦ *Data Processing Developments (New Systems)*
- ♦ *Data Processing Security (Existing systems)*

INTERNAL AUDIT PROJECT

PHASE IV:

- Implementation of Audit Plan

INTERNAL AUDIT PROJECT

PHASE V:

- ♦ Identify Skills Requirements & Training Needs for the Internal Audit Department

➤ DELIVERABLE(S):

- ♦ *Skills Requirements Identified;*
- ♦ *Actual Skills Available Documented;*
- ♦ *Skills Shortfalls, if any, Identified & Documented*
- ♦ *Training Needs Identified*

INTERNAL AUDIT PROJECT

PHASE VI:

- Staff Training provided through a mixture of on-site (in-house) training and out-Bank coursed as appropriate

INTERNAL AUDIT PROJECT

PHASE VII:

- ◆ **Optimise the use of facilities available from the IBIS and other computerised accounting systems**
 1. *review the audit trailing facilities available from the IBIS and other computerised accounting systems*
 2. *identify reports which are available and which can be used without any system changes required*
 3. *identify reports which are available and which can be used with some report formatting &/or system changes*
 4. *identify data which is available and which can be presented in customised reports requiring some system changes or which can be down loaded onto a PC for further use*

➤ **DELIVERABLE(S):**

- ◆ *List of automated reports/facilities and audit trailing already available and which can be utilised by the audit department without requiring any system changes*
- ◆ *List of automated reports/facilities and audit trailing already available and which can be utilised by the audit department but which require some system changes*
- ◆ *List of automated reports/facilities and audit trailing already available and which can be utilised by the audit department after some system changes and/or additional report generation*
- ◆ *List of automated reports/facilities and audit trailing which should form an integral part of each and every audit*

INTERNAL AUDIT PROJECT

PHASE VIII:

- Development of a New Products Process

➤ DELIVERABLE:

- *a New Products Process which includes all the necessary features relating to Risk Analysis and Assessment, Credit, Accounting, Czech and Slovak Accounting and Other Regulations and which involves all the appropriate parties including the Internal Audit Department, as appropriate*

Ceskoslovenska Obchodni Banka A.S.

DRAFT PLAN
INTERNAL AUDIT PROJECT

Deloitte & Touche, Czech & Slovak Republics

July 1994

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INTERNAL AUDIT PROJECT

		Estimated Timing
Phase I	<ul style="list-style-type: none"> Fact Finding & Familiarisation: Overview of & Familiarisation with the Bank's Business Activities and Automated Systems including IBIS; Overview of the Structure & Organisation of the Internal Audit Department, Audit Plan, Personnel & Procedures; Report Preparation 	12-15 Man Days
Phase II	<ul style="list-style-type: none"> Recommendations for Internal Audit - Plan, Structure etc. 	10-15 Man days
Phase III	<ul style="list-style-type: none"> Development of Practical & Customised Audit Procedures covering, as a minimum, the principal business activities of the Bank 	
Phase IV	<ul style="list-style-type: none"> Implementation of Audit Plan 	
Phase V	<ul style="list-style-type: none"> Identify Skills Requirements & Training needs for Internal Audit Department 	3-5 Man days
Phase VI	<ul style="list-style-type: none"> Staff Training for Internal Audit 	
Phase VII	<ul style="list-style-type: none"> Optimise Use of Audit Trailing facilities available from the computerised accounting system(s) including IBIS 	15-20 Man Days
Phase VIII	<ul style="list-style-type: none"> Development of New Product Process 	3-5 Man Days
TOTAL		

INTERNAL AUDIT PROJECT

PHASE I:

- ♦ Fact Finding & Familiarisation including obtaining an understanding of :
 - the Bank's Automated Accounting Systems;
 - Internal Audit Department's Structure & Plan
 - Current & Planned Business Activities

➤ OBJECTIVE:

*BUILD AN AUDIT & RISK PROFILE
OF THE BANK*

INTERNAL AUDIT PROJECT

PHASE II:

- Recommend and Develop an Effective Audit Plan & Programme for the Bank's Internal Audit Department.

➤ DELIVERABLE(S):

- *an Audit Plan which, in the first instance, is balance-sheet and P & L related*
- *an Audit Plan which is based on Risk Assessment & Analysis and is tailored to meet the Risk Sensitivities of the Bank's current and planned business activities*
- *an Audit Plan which is flexible to meet a changing environment and one that can respond to special situations as they arise*
- *an Audit Plan which meets the needs of Senior Management and the Supervisory Board*
- *an Audit Plan which is best banking practice and meets generally accepted International Auditing Standards*
- *an effective and professional Audit Programme which will eventually enable the external auditors to reduce the extent of their auditing, place more reliance on the work of the Internal Auditing Division and thus enable the Bank to reduce External Audit Fees*

INTERNAL AUDIT PROJECT

PHASE III:

- **Develop Customised and Practical Audit Procedures which are applicable and sensitised to the underlying risks in the Bank's Business Activities**

The *main focus* will be:

1. *audit objectives;*
2. *balance sheet & statement of P & L related i.e. each audit includes an element of trial balancing and proof of the prime accounting records;*
3. *all risks assessed and covered;*
4. *effective internal controls are in place and are operative;*
5. *all transactions are approved prior to booking;*
6. *all transactions are booked & booked correctly;*
7. *all income received and booked to the accounts;*
8. *continuous review of the computerised accounting systems in use;*
9. *verification that operating staff are familiar with their jobs;*
10. *compliance with Bank Policy & Directives;*
11. *compliance with the Rules & Regulations of the Czech & Slovak Republics;*

INTERNAL AUDIT PROJECT

➤ **DELIVERABLE(S):** *AUDIT PROCEDURES COVERING THE FOLLOWING AREAS/BUSINESS ACTIVITIES*

- ♦ *Accounting & General Ledger*
- ♦ *Foreign Exchange & Money Market (include. FRAs, Currency Options)*
- ♦ *Funding Risks (Exposure to Interest Risks)*
- ♦ *Securities & Investments Activities*
- ♦ *Loans & Advances (Credit)*
 - Bills of Exchange*
 - Bills Discounted*
 - Letters of Credit*
 - Guarantees Issued*
- ♦ *Cash Area & Vault*
- ♦ *Nostro Accounts Reconciliations*
- ♦ *Internal Accounts Reconciliations*
- ♦ *Fixed Assets*
- ♦ *Retail Banking (Demand Deposit Accounts)*
- ♦ *Data Processing Developments (New Systems)*
- ♦ *Data Processing Security (Existing systems)*

INTERNAL AUDIT PROJECT

PHASE IV:

- Implementation of Audit Plan

INTERNAL AUDIT PROJECT

PHASE V:

- ◆ Identify Skills Requirements & Training Needs for the Internal Audit Department

➤ DELIVERABLE(S):

- ◆ *Skills Requirements Identified;*
- ◆ *Actual Skills Available Documented;*
- ◆ *Skills Shortfalls, if any, Identified & Documented*
- ◆ *Training Needs Identified*

INTERNAL AUDIT PROJECT

PHASE VI:

- Staff Training provided through a mixture of on-site (in-house) training and out-Bank coursed as appropriate

INTERNAL AUDIT PROJECT

PHASE VII:

- **Optimise the use of facilities available from the IBIS and other computerised accounting systems**
 1. *review the audit trailing facilities available from the IBIS and other computerised accounting systems*
 2. *identify reports which are available and which can be used without any system changes required*
 3. *identify reports which are available and which can be used with some report formatting &/or system changes*
 4. *identify data which is available and which can be presented in customised reports requiring some system changes or which can be down loaded onto a PC for further use*

➤ DELIVERABLE(S):

- *List of automated reports/facilities and audit trailing already available and which can be utilised by the audit department without requiring any system changes*
- *List of automated reports/facilities and audit trailing already available and which can be utilised by the audit department but which require some system changes*
- *List of automated reports/facilities and audit trailing already available and which can be utilised by the audit department after some system changes and/or additional report generation*
- *List of automated reports/facilities and audit trailing which should form an integral part of each and every audit*

INTERNAL AUDIT PROJECT

PHASE VIII:

- Development of a New Products Process

➤ **DELIVERABLE:**

- *a New Products Process which includes all the necessary features relating to Risk Analysis and Assessment, Credit, Accounting, Czech and Slovak Accounting and Other Regulations and which involves all the appropriate parties including the Internal Audit Department, as appropriate*

TABLE OF CONTENTS

FUNCTION A - TREASURY & FOREIGN EXCHANGE

1. Detailed Work Plan for Treasury
2. Work Plan for Treasury (initial draft)
3. Risk Measurement and the Control of Risk in CSOB Report

Section 1

**Risk Measurement and the Control of Risk
in Ceskoslovenska Obchodni Banka AS**

Executive Summary

Prague - July 28, 1994

Clive Grumball

1. Background.

CSOB management have recognised that the anticipated increase in the complexity of the bank's balance sheet, coupled with the recent increase in the regulatory focus on market value, demands a new approach to measuring, monitoring, and controlling risk in the bank.

This approach should reflect the likely requirements of the Czech National Bank, which is in the process of incorporating the best practices of Europe into its own regulations to ensure the establishment of a secure and healthy domestic banking system in the longer term.

2. Purpose of this Paper.

This purpose of this paper is to set out solutions to management's requirements.

3. The Structure of this Paper.

The structure of this paper is follows:

- **Section 2 - Overview**

This section provides a background to the developments in the measurement and control of risk in the world's financial markets during the past two decades and their implications to the asset and liability management function of CSOB. It also provides an overview of the proposed methods for the measurement and control of market risk and liquidity risk.

- **Section 3 - The Recommended Measurement of Market Risk.**

This section recommends a method which will enable management to measure, monitor and control market risk resulting from the activities of the dealing room.

This method is broadly consistent with the attitude of the Basle Committee and, as such, is likely to be the method of risk control that will be imposed on CSOB by the CNB. As such it should be considered as forming the basis for control of CSOB's overall process of managing market risk in the medium term.

- **Section 4 - Liquidity Risk.**

This section recommends a method which will enable management to measure, monitor and control liquidity risk effectively.

- **Section 5 - Gap Analysis.**

This section defines gap analysis and recommends the role it will play in the overall asset and management liability function of the CSOB.

- **Section 6 - Simulation Analysis.**

This section defines simulation analysis and recommends the role it will play in the overall asset and management liability function of the CSOB.

- **Section 7 - Duration Analysis.**

This section defines duration analysis and recommends the role it will play in the overall asset and management liability function of the CSOB.

4. Control of Market Risk.

The control of risk is considered on two levels:

- Risk resulting from positions taken in the Dealing Room.
- Risk resulting from bank wide [consolidated] positions.

4.1. Dealing Room Activities.

Market risk resulting from the dealing room activities of CSOB is to be measured and reported daily in a way that will enable management to readily translate risks being run into a measure of the direct impact on the bank's overall profitability.

Risk will be expressed as Trading Risk Units ["TRU"s] where 1 TRU will represent a pre-defined cash value impact on the bank's overall profitability for a given instrument or portfolio. Further discussions would need to occur - initially within ALCO - to define the cash value impact that is appropriate and acceptable for the bank.

The TRU method of risk control should be introduced to coincide with the implementation of the Front End Dealing System ["FEDS"] which will be specified to report risk in this way.

4.2. Global Treasury.

Whilst it is important that the bank adopts a uniform measure of risk it will not be possible at the outset to extend the concept of the TRU method of risk control to the activities of CSOB as a whole. This results from difficulties with the current processing capability of IBIS [e.g. It is not possible to position FRAs in risk management reports].

For this reason it is recommended that, initially, the control of the consolidated risk position of the bank is to be based on the more traditional methods, and in particular Gap Analysis.

A new consolidated Interest Rate Sensitivity [GAP] report has been specified as part of MIS. When this is available it is recommended that it is used as a controlling factor in managing market risk in CSOB by forming a basis for ALCO to:

- allocate an appropriate level of TRUs to the dealing room.
- formulate appropriate hedge or risk position strategies for the bank.

5. Control of Liquidity Risk.

Liquidity risk in CSOB is to be measured and reported **daily** as described in *Section 4 - Liquidity Risk*.

There are some systems implications which will delay the immediate implementation of this methodology. In particular, better reporting will be required from the Central Database.

However, the information required already forms part of the CNB reporting process required by the bank which should reduce the implementation lead time.

Introduction of the proposed limit structure should be targeted for 1 Oct 1994. However, this will only be a realistic target if there is the necessary degree of commitment and effort on the part of all concerned.

6. Possible Immediate Market Risk Management Capability.

Potentially, interest rate risk for both Prague and Bratislava could be individually measured and reported **daily** in terms of "Milli-months" as described in *Section 7 - Duration Analysis*. This would at least cover the dealing room activities in both offices.

The functional specification of IBIS includes the reporting of risk in this format. [*Report 6C - Consolidated MM & FX CZK/M* described on page 8/1-1 *IBIS/AS Foreign Exchange and Money Market Reports Manual*]. However, the report will almost certainly need to undergo considerable testing and validation before it could be used in a live environment.

It is difficult to predict the time scale necessary to complete this task but management should consider giving priority to its production to ensure that there is at least some means of quantifying the majority of the interest rate risk being run in CSOB whilst the FEDS is being implemented.

7. MIS

CSOB has a Central Database which can be useful to the Treasury area for reporting and managing the bank's consolidated risk positions. However, to date no reports have been completed. This lack of MIS increases the risk of:

- Significant opportunity costs.

The dealers will be inhibited from trading on the basis that they cannot do so without the ability to reconcile their positions and performance.

- Greater risks as defined throughout this paper.

Two excellent recent case studies of the potential dangers of ineffective MIS are:

- The failure to adequately report foreign exchange option risk positions carried by Allied Lyons, a major UK company. This failure cost the company in the region of GBP 140,000,000.
- The failure to control risk positions in oil futures which resulted in the heavy losses incurred by Metallgesellschaft.

Section 2

Risk Measurement and the Control of Risk in Ceskoslovenska Obchodni Banka AS

Overview

Prague 28 July, 1994

Clive Grumball

1. Overview.

During the past thirty years or so, the world's financial markets have undergone a staggering evolution which has accelerated since the early 1970's. During this time we have seen the rapid growth of the Eurocurrency markets and the increase in the numbers of banks becoming involved in international banking.

As part of this evolution, banks, and their regulators, have been forced to focus their attention on a number of key issues in the area of overall risk management. These include:

- **Credit risk** - as banks were faced with the prospect of wholesale counterparty failure in a number of areas of lending hitherto considered to be capital certain [e.g. loans made to governments].
- **Counterparty delivery risk** - in the foreign exchange markets [post the failure of Bank Herstatt in 1973]. This further extended the concept of credit risk.
- **Liquidity risk** - [evidenced by the secondary banking crisis in the UK and the Savings and Loans industry in the USA].
- **Market risk** - especially post 1971 when the Bretton Woods Agreement on exchange rates was ended. This, together with an increased reliance on narrow monetary policy targets by governments in attempts to control the ravages of inflation prevalent over this period, fuelled interest and foreign exchange rate uncertainties [and hence volatilities] in a way hitherto unknown by the market.

This background of major upheaval has resulted in considerable changes in the business patterns of market users who have found themselves facing a far greater degree of difficulty in efficiently performing their functions than their predecessors.

In particular the objective of asset / liability management has shifted from providing a reaction to specific risks to providing an overall pro-active plan for risk.

Traditionally, asset / liability management involved forecasting future interest rates and then positioning the balance sheet, within broadly defined limits, to maximise net interest income. Nowadays, by contrast, it involves the management of the sensitivities of earnings, capital, liquidity, and market value to both anticipated and unanticipated fluctuations in interest rates.

This widening of the scope of asset and liability management reflects three factors:

- The radical changes that have occurred in the market environment.
- The change of attitudes of the industry regulators.
- The advances in technology.

1.1. Changes in the market environment.

Since the late 1970's, the market has shown a greater willingness to take market risk rather than credit risk. This follows the lessons learned from poor credit decisions taken throughout the early 1970's, and the belief that trading losses, generally speaking, are lower than lending losses.

This has led to a greater focus on trading rooms and, post the lessons learned during the early 1980's, the measurement and control of interest rate risk. In turn, this has resulted in:

- The proliferation and use of the techniques by which market participants could operate
- The regular development, use, and marketing of derivatives.

1.2. The change of attitudes of the regulators.

Regulatory changes have also contributed to the growing influence of asset and liability management within financial institutions. In particular, bank regulators have focused increasingly on how interest rate fluctuations affect bank capital.

1.3. Advances in technology.

Technology has also influenced the evolution of modern balance sheet management.

Increasingly complex balance sheets have forced banks to develop more sophisticated risk management capabilities. This has been facilitated by a combination of advances in pricing methods and increased computer processing power.

Technology has migrated from the derivative dealing rooms, where its use often enabled the development of advanced risk management techniques, to the offices of the asset and liability managers. As a consequence the asset and liability management process has evolved beyond being the reactive manipulation of a particular part of the balance sheet into a proactive, strategic management of the entire balance sheet.

2. Targeting a Risk Measure.

Asset and liability management in CSOB should have three functions:

- Control of the risk / return profile of the bank.
- Measurement of the efficiency of capital deployment.
- Measurement of how well credit lines are being used.



2.1. Control of the risk / return profile.

The management of the risk / return profile requires a performance measure target. This may be earnings, capital, or market value. Senior management are responsible for identifying target measures of risk and for setting parameters to limit the risk position to acceptable levels.

Traditionally, banks have focused on managing short-term earnings and liquidity risk. However, any bank with positive equity will introduce market value risk if it stabilises earnings risk; conversely, if it maintains market value, earnings will fluctuate. As such, short-term earnings risk is not an adequate measure of risk for a bank striving to maximise shareholder value. The situation has been complicated somewhat by the attitudes of bank regulators.

Bank regulators currently support the recognition in regulatory capital of any unrealised gains and losses on investment securities that are marked to market. Where applicable, the consequence of this is that regulatory capital will fluctuate alongside interest rates, even if earnings remain stable.

2.2. Measurement of capital deployment and credit line utilisation.

In modern balance sheet management the use of risk-adjusted returns on capital is emerging both as a measurement of performance and as a benchmark for business decisions.

3. Classification of risk.

Total risk to a financial institution can be classified under the following headings:

- **Credit Risk**

The risk of loss due to the failure of a counterparty to honour an obligation.

- **Liquidity Risk**

The risk of the inability to meet liabilities as they fall due.

- **Operations Risk**

The risk of loss due to front office or back office failures.

- **Market Risk**

The risk of loss to incorrect position taking.



This classification includes the three topics mentioned at the beginning of this section, together with operations risk - which, regrettably, always seems to have existed to a greater or lesser degree!

4. Traditional Methods for the Measurement and Control of Market Risk.

At present there are three established methods to report market risk.

- Gap Analysis
- Simulation Analysis
- Duration Analysis

During the 1970s and early 1980s, when banks focused almost exclusively on short-term earnings risk, gap analysis emerged as the most popular method by which to measure interest rate risk. More recently, as banks have begun to assess the effects of longer-term interest rate risk, gap analysis has been complemented by the two other measurement tools [duration and simulation]. Each of these methods has its advantages and disadvantages.

The potential uses of these methods by CSOB are discussed in individual sections of this paper.

6. Proposed Method for the Measurement and Control of Market Risk.

6.1. Overview.

Interest rate risk is measured in terms of the sensitivity of a target variable to interest rate changes. With gap analysis and simulation the target variable is net interest income, while duration focuses on changes in market value following [small] interest rate changes.

In their search for an accurate and pertinent measure of interest rate risk, banks and regulators are turning increasingly to measures of market value. The market value of a portfolio is simply the sum of the market values of all assets and liabilities based on the discounted value of all future cash flows.

The increasing complexity of banks' balance sheets, coupled with the recent regulatory focus on market value, demands a new approach to measuring, monitoring, and controlling balance sheet risk.

Ideally this approach should enable banks to express the risk exposure of complex balance sheets accurately in a single measure. It should also allow management to add value by anticipating and planning for interest rate risk.

6.2. The proposed method.

Section 3 of this paper proposes a method for measuring and reporting risk. This method offers a number of advantages.

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- It is a relatively simple, uncomplicated process.
- It clearly measures cash at risk.
- It takes into account current market conditions and their relationship to historic circumstances.
- It can be applied to all risk instruments.
- It can be used to limit risk by instrument and by portfolio.
- It can be used to construct optimal hedges for open positions.
- It is broadly in line with the current methodology favoured by the Basle Committee.

Following on from this, portfolio limits which are based on this methodology will be dynamic, will relate to a single simple - yet comprehensive - benchmark, will be symmetrical, will be risk related, and can be adjusted readily according to risk tolerance.

7. Proposed Method for the Measurement and Control of Liquidity Risk.

Section 4 of this paper proposes a method for the measurement and control of liquidity risk in CSOB. The proposals are additional / complimentary to the requirements of the Ceska Narodni Banka under its Provision on Liquidity Rules for Banks pursuant to Article 15 of the Act on Banks of February 1992.

The proposed method is broadly similar to the reporting requirements of the CNB and is consistent with the specification of the liquidity report for MIS. In addition to this the method has the advantage that:

- It is a relatively simple, uncomplicated process.
- It can be used to construct a cost effective liquidity strategy.



Section 3

Risk Measurement and the Control of Risk in Ceskoslovenska Obchodni Banka AS

The Recommended Measurement of Market Risk

Prague 28 July, 1994

Clive Grumball

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Trading Risk Units

1. Overview.

The ideal measure of interest rate risk would enable management to simultaneously manage earnings risk and the market value of equity. Regrettably, no appropriate methodology has yet been devised which can meet this requirement for all organisations in all situations.

The measurement of earnings risk is based on accrual accounting, whilst the market value of equity is the measure of economic value. As such, against the background of currently operating accounting standards, the management of banks have sought to achieve a sensible balance between managing earnings and market value - as far as it is possible.

However, the concerns remain. Scrutiny of published financial statements by both the public and shareholders may affect the value of the bank since the equity market focuses on earnings and earnings-related ratios.

Increased earnings volatility may cause shareholders to demand an increased premium represented by a lower stock price. At the same time reported earnings results may also affect regulatory capital.

The growing complexity of banks' balance sheets, together with a greater degree of sophistication in modern risk management instruments now requires management to even the balance between the control of earnings and market value and look at long term interest rate risk rather than merely focus on income results.

However, whilst banks have accepted that they are unable to hedge the value of equity fully without incurring unacceptable levels of earnings volatility, senior management has been able to consciously decide on the level of risk to which they will expose themselves. In so doing asset and liability management decisions have been able to reflect some element of rational choice.

1.1. The Scope of Limits.

Limits, whether for individual products or for entire portfolios, are based on the premise that they represent the maximum affordable losses by an institution over a given period of time in a pre-defined market disaster scenario.

1.2. Defining Limits.

Ideally limits should be expressed:

- In a form which is common to individual products as well as to portfolios, no matter how complex or diverse.

- In a way that can conform to a range of different market levels and conditions.
- In a way that can reflect changes in the circumstances of the institution itself.

1.3. Measurement of risk.

The starting point for a measurement of interest rate risk is to determine the market value of equity. Unlike the more traditional measures of interest rate risk, a mark-to-market valuation can meet the necessary criteria and can be applied to a variety of positions and markets.

Once the market value is known, management can then set in place a measure of the amount of the equity value they are prepared to put at risk to movements in market rates. This amount is referred to as the "value at risk", and is defined as the expected loss from an adverse market movement with a specified probability over a given period of time.

"Value at Risk" forms the basis of the proposed methodology for the measurement and control of risk within CSOB.

2. Value at Risk.

2.1. Methodology.

The calculation of "value at risk" is a relatively straightforward process which involves relating current market conditions to historic market conditions. It operates as follows:

- Calculate the basis point / tick / pip value for each instrument, irrespective of type or maturity.
- Calculate the volatility of that instrument expressed as its equivalent movement in the relevant market rates.
- Establish an adjusting factor - a safety net - which will enable management to adjust maximum risk exposure with the minimum of systems implications in the minimum amount of time, and causing minimum alarm to the dealers. This can be achieved by applying a multiplier to the volatility of the instrument/portfolio.
- Combine these three factors to compute the potential loss resulting from that position expressed as a cash value.
- Convert each cash value into Trading Risk Units [TRUs]
- Aggregate TRUs by currency by maturity time band by instrument.

Long positions by instrument are offset against short positions within each maturity time band by currency subject to a weighting which reflects basis risk.

- Aggregate instrument net TRU amounts by currency by maturity time band.
Long and short positions in individual instruments are offset against one another subject to a weighting to allow for basis risk.
- Aggregate the absolute amount of currency positions to arrive at total TRU value and relate to the current limit in place.

Examples of each of the above processes are given in Para 8 below.

3. Basis Risk

One of the principal problems with the use of benchmarks to express trading risk is that it is not always readily possible to articulate risks which may still exist even when one instrument apparently hedges out a position in a different instrument [i.e. basis risk]. To overcome this CSOB could track the correlation between the different portfolio instruments and use it as an adjusting factor when calculating the net risk position.

However, this may well become impractical in the case of a more complex and diversified portfolio. For this reason the use of standard weightings within instruments and across the portfolio as a whole is considered to be the best approach to take.

4. Advantages of the proposed methodology.

There are a number of advantages for using a TRU based method for measuring and reporting risk.

- It is a relatively simple, uncomplicated process.
- It clearly measures cash at risk.
- It takes into account current market conditions and their relationship to historic circumstances.
- It can be applied to all risk instruments.
- It can be used to limit risk by instrument and by portfolio.
- It can be used to construct optimal hedges for open positions.
- It is broadly in line with the current methodology favoured by the Basle Committee.

Following on from this portfolio limits themselves which are based on this methodology will be dynamic, will relate to a single simple - yet comprehensive - benchmark, will be symmetrical, will be risk related, and can be adjusted readily according to risk tolerance.

5. Systems Implications.

There are systems implications in incorporating such a method in CSOB. In Section 1 - Executive Summary it was stated that it will not be possible at the outset to extend the concept of the TRU method of risk control to the activities of CSOB as a whole. This resulted from the difficulties with the current processing capability of IBIS. However there should be no such problems for implementation of the method within Valuta.

- Valuta already calculates the basis point value of fixed income securities, which is a far more complicated process than calculating the basis point value of a short term asset or liability.
- Tracking and calculating volatility is also a relatively simple statistical analysis exercise, which should present few difficulties to Valuta.
- Once these factors are determined the TRU calculation process is extremely basic.

6. Management Issues.

CSOB Senior Management is responsible for setting parameters to limit risk positions to acceptable levels.

CSOB Management must, therefore, decide:

- How much it is prepared to risk losing through its trading operations in any given activity and in total across all activities.
- The time frame over which an anticipated loss might materialise
- How they will adapt the limit structure under different market scenarios.

Experience suggests that very few institutions actually do this effectively. In general it seems that a bank's management is able to come to terms with setting in place limit structures which can translate back to the value at risk. However, such limit structures are usually set with little [or no] regard to actual market conditions.

For example, a management will tolerate running "short" positions which are as large when interest rates are at (say) a 20 year historic high as they are when rates are at a 20 year historic low.

It is conceivable that limits could be set automatically by referring the risk position to a given range which was driven by relating current market conditions to historic conditions.

For example, in the event interest rates are at an historic high the volatility of a short position in a bond would be automatically subjected to a significantly increased multiplier.



If it is not possible to automate in this way then procedures should be introduced to ensure the pro-active participation of management in the control of limits.

An example of setting TRU limits for overall and individual activity risk positions is given in Para 9 below

7. Recommendations for TRU calculation factors at inception.

7.1. Formula.

It is recommended that CSOB uses the following formula to determine the TRU value of a given instrument:

- **Instrument TRU = $\frac{BPV * v * m}{TRV}$**

where:

- **BPV** = Basis Point Value - The change in value of the mark to market of an instrument brought about by a 1 basis point/tick/pip change in its yield/price.
- **v** = Volatility of the instrument expressed in basis points / price
- **m** = Multiple of volatility
- **TRV** = Value attributable to one risk unit

7.2. Volatility [v].

It is recommended that CSOB uses a movement in the relevant market rate which is equivalent to 2 standard deviation movements around the average market rate for that instrument based on a 250 day price history.

Two standard deviation movements translates into a 97.5% probability that the one-day change following an adverse market movement will not exceed a given amount; conversely, there is also a 2.5% probability that the change to the portfolio value will exceed that amount.

It is accepted that it may be more difficult to focus on a relevant benchmark on which to calculate the precise volatility factors for the domestic market since rate moves in certain areas of the market may not always appear rational when compared to non-domestic markets.

This is seen as an obstacle to implementing the TRU methodology generally within the

bank as a whole at this stage. However, it should be possible to track volatilities which are relevant to the dealing room, and incorporate these within the proposed method for the control of risk resulting from the activities of the dealers.

7.3. Multiplier [m].

Given the relatively early stage of the evolution of activities in the financial markets, both domestically and internationally, it is recommended that a multiplier of 2 is used. This should provide management with a healthy "comfort zone" and is not inconsistent with market practice.

7.4. TRV.

The recommended TRV is CZK 10,000

7.5. Basis Risk Weighting used within individual instrument time buckets.

It is recommended that where there is not an exact match of life of individual offsetting instruments within any "time bucket" the weighting used will be 5%.

For example an apparent near zero risk position which comprises of a bought FRA with a life of 91 days, whose end date coincides with a sold FRA with a life of 90 days will be subjected to a 5% weighting.

This weighting will reflect the fact that a sudden overnight interest rate shift may adversely affect the later LIBOR fixing of the shorter maturity FRA. This is a real risk which is over and above the marginal difference in the basis point values of the two FRAs.

7.6. Basis Risk Weighting used when offsetting long and short positions across different time buckets by individual instrument.

It is recommended that where net longs in an instrument in one time bucket are offset against net shorts in another time bucket the weighting used will be 10%.

7.7. Basis Risk Weighting when offsetting long and short positions for different instruments.

It is recommended that where net longs in one instrument are offset against net shorts in another the weighting used will be 10 per cent.

8. Examples to demonstrate the use of TRUs.

8.1. Calculation of BPV.

- CSOB places CZK 50,000,000 for 90 days.

The BPV of the loan will be $CZK 50m * 90 / 360 * 0.01 / 100 = CZK 1,250$

8.2. Calculation of TRU value of a position.

- CSOB places CZK 50,000,000 for 90 days.
- BPV is CZK 1,250 [see 8.1. above].
- Its current volatility translates to a rate movement of 12 basis points.
- The multiple in place is 2
- Each TRU is equivalent to CZK 10,000

From the formula:

$$\text{Instrument TRU} = \frac{\text{BPV} * v * m}{\text{TRV}}$$

$$\text{Loan TRU} = \frac{1,250 * 12 * 2}{10,000}$$

$$\text{Loan TRU} = 3.00$$

Management can see immediately that the forecast probable cost of an adverse one-day move against the loan will produce a loss of CZK 30,000.

8.3. Adjusting offsetting TRUs to allow for Basis Risk using observed correlation.

Assume:

- Borrow cash with a maturity of one year with a TRU value of 10
- Buy corresponding three month deposit futures contracts also to the value of 10 TRUs.

On the face of it the net TRU exposure will be zero.

However, assume:

- The correlation between the chosen futures contract and the one year deposit is 85 per cent.

Adjusted TRU position will be:-

$$= 10 - (10 \times 85\%)$$

$$= 1.50 \text{ TRU.}$$

8.4. Adjusting offsetting TRUs to allow for Basis Risk using standard correlation.

Assume CSOB:

- Buys FRA 6 against 12 months [180 days] CZK 200,000,000
- Sells FRA 6 against 9 months [90 days] CZK 100,000,000
- Sells FRA 9 against 12 months [90 days] CZK 100,000,000
- Lends Cash for 12 months [360 days] CZK 100,000,000
- Takes Cash for 6 months [180 days] CZK 100,000,000

Assume also:

- There are 2 time buckets:
 - Sight to 6 months
 - >6m to 1 year

8.4.1. FRA Portfolio.

- BPV of 6 v 12 FRA = $200,000,000 * 180/360 * .01/100 = \text{CZK } 10,000$
- BPV of 6 v 9 FRA = $100,000,000 * 90/360 * .01/100 = \text{CZK } 2,500$
- BPV of 9 v 12 FRA = $100,000,000 * 90/360 * .01/100 = \text{CZK } 2,500$

Given:

- Volatility of 6 v 12 FRA 10 basis points
- Volatility of 6 v 9 FRA 9 basis points
- Volatility of 9 v 12 FRA 11 basis points
- Multiple in place 2
- TRV CZK 10,000

Then TRU values will be:

- TRU 6 v 12 FRA $\frac{10,000 * 10 * 2}{10,000} = 20.00 \text{ TRUs}$

- TRU 6 v 9 FRA $\frac{2,500 * 9 * 2}{10,000} = 4.50$ TRUs
- TRU 9 v 12 FRA $\frac{2,500 * 11 * 2}{10,000} = 5.50$ TRUs

All three FRA positions are in the same time bucket i.e. " 6 months to 1 Year". Therefore, offset the bought FRA against the two sold FRAs, weighting the smaller value by a standard 5 per cent.

- $[20.00] - [(4.50 + 5.50) * 95\%] = 10.50$ TRUs

8.4.2. Cash Portfolio.

- BPV of 1 year loan = $100,000,000 * 360/360 * .01/100 =$ CZK 10,000
- BPV of 6 month loan = $100,000,000 * 180/360 * .01/100 =$ CZK 5,000

Given:

- Volatility of 1 year loan 13 basis points
- Volatility of 6 month loan 15 basis points
- Multiple in place 2
- TRV CZK 10,000

Then TRU values will be:

- TRU 1 year loan $\frac{10,000 * 13 * 2}{10,000} = 26.00$ TRUs
- TRU 6 month deposit $\frac{5,000 * 15 * 2}{10,000} = 15.00$ TRUs

The loan and the deposit are in different time buckets. Therefore, offset 1 year loan against 6 deposit weighting the smaller value by a standard 10 per cent.

- $[26.00] - [15.00 * 90/100] = 12.50$ TRUs

8.4.3. Net Portfolio TRU.

Offset Net FRA TRU against Net Cash Book TRU weighting the smaller value by a standard 10 per cent.

- $12.50 - [10.50 * 90/100] = 3.05$ TRUs

The TRU position would be reported as 3.05 TRUs.

Management will be able to see immediately that the probable adverse P/L impact of the basis risk contained within the apparently zero risk position is CZK 30,500.

9. Examples which Establish Overall and Product TRU Limits.

The following example is for illustrative purposes only. Its purpose is to provide some indication of the type of process which would be discussed inside ALCO.

9.1. Calculation of maximum "Value at Risk".

Assume that Bank A has a capital of CZK 5,000,000,000 and that its management is prepared to risk a maximum of 5% of this total to an adverse movement in market rates in a full year [say 250 trading days]. However, management also decides that it does not wish to risk losing more than 1/25 of this amount on any one day.

- **Maximum overnight risk "pot" = $\frac{5,000,000,000}{25} * 5\% = \text{CZK } 10,000,000$**

9.2. Allocation to Strategically Important Activity ["SIA"].

Assume that it is strategically important to devote a large part of the "risk pot" to trading spot foreign exchange.

- **Bank A therefore decides to allocate CZK 6,000,000 to this activity.**

9.3. Allocation of Balance of Risk Pot to Other Activities.

The balance [i.e. CZK 4,000,000] would subsequently be allocated to other trading areas within Bank A.

9.4. Sub-allocation of CZK 6,000,000 allocated to SIA.

Assume Bank A sub-allocates:

- CZK 4,000,000 to spot CZK/USD
- CZK 2,000,000 to CZK/DEM.

9.5. Setting TRU Limits.

If TRV = CZK 10,000 then:

- The limit for CZK/USD would be $4,000,000 / 10,000 = \text{TRU } 400$
- The limit for CZK/DEM would be $2,000,000 / 10,000 = \text{TRU } 200$

9.6. Translating TRU Limits into Position Limits.

9.6.1. CZK/USD

Assume:

- CZK/USD is trading at 28.00
- overnight volatility assigned to this exchange rate by Bank A [for the purpose of this example] is CZK 0.28
- multiple = 2

Maximum Nominal Open Position in CZK/USD = USD 7,142,857

The TRU position reported for a position of this size would be:

$$\text{Pip Value} = \text{USD } 7,142,857 * .01 = \text{CZK } 71,428.57$$

$$\text{TRU} = \frac{71,428.57 * 2 * 28}{10,000}$$

$$\text{TRU} = 400.00$$

Management would have the comfort of knowing that the probability of the bank realising a loss over-night in excess of CZK 4,000,000 on a position which fully utilised the limit was statistically less than 2.5 per cent [taking the multiplier into account].

9.6.2. CZK/DEM

- CZK/DEM is trading at 18.00
- overnight volatility assigned to this exchange rate by Bank A [for the purpose of this example] is CZK 0.16
- multiplier = 2

Maximum Nominal Open Position in CZK/DEM = USD 6,250,000

The TRU position reported for a position of this size would be:

$$\text{Pip value} = \text{USD } 6,250,000 * .01 = \text{CZK } 62,500.00$$

$$\text{TRU} = \frac{62,500 * 2 * 16}{10,000}$$

TRU = 200.00

Management would have the comfort of knowing that the probability of the bank realising a loss over-night in excess of CZK 2,000,000 on a position which fully used the limit was statistically less than 2.5% [taking the multiplier into account].

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Section 4

Risk Measurement and the Control of Risk in Ceskoslovenska Obchodni Banka AS

Liquidity Risk

Prague 28 July, 1994

Clive Grumball

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Measurement and Control of Liquidity Risk in CSOB.

1. Overview.

Total risk to a financial institution can be classified under the following main headings:

- **Credit Risk**

The risk of loss due to the failure of a counterparty to honour an obligation.

- **Liquidity Risk**

The risk of failure to meet liabilities as they fall due.

- **Operations Risk**

The risk of loss due to front office or back office failures.

- **Market Risk**

The risk of loss due to incorrect position taking.

2. Purpose of this paper.

This paper focuses on the second category above - Liquidity Risk.

As such its purpose will be to propose a method to measure, monitor, and control liquidity risk in CSOB.

The proposals in this paper are additional / complimentary to the requirements of the Ceska Narodni Banka under its Provision on Liquidity Rules for Banks pursuant to Article 15 of the Act on Banks of February 1992.

3. Control of Liquidity Risk.

3.1. Background.

The effective management of liquidity risk is crucial to any bank and necessitates a prudential approach to both domestic and foreign currency liquidity needs. In the case of CSOB the potential problems are two-fold:

- The domestic money market is relatively new and dominated by one or two banks which control a large percentage of the deposit base. Whilst developments post 1992 have eased the general liquidity position of the domestic market, rates remain highly volatile and the market generally confined to maturities of 3 months or less.



- The bank has no currency capital with which to support any significant foreign currency element of the balance sheet.

The level of prudence will therefore be greater than might otherwise be the case.

3.2. Measuring Liquidity Risk.

CSOB is required to report its liquidity position to CNB on a quarterly basis in a pre-determined format. In addition the Economics Department receives a daily report *20 T' - Maturity Analysis Assets and Liabilities*. [This report is produced by IBIS and provides a summary maturity analysis of assets and liabilities in base currency.]

Whilst these reports may meet the specific requirements of the CNB and the Economics Department respectively, they do not necessarily afford CSOB management with an effective means to measure or control liquidity risk on a proactive basis. However, the information contained in these two reports, particularly the CNB report, could be re-formatted in a way which would allow CSOB this capability.

3.3. Methodology.

The main purpose of the report is to ensure management will be able to maintain control over CSOB's liquidity position even in a worst case scenario.

For this reason all facilities given by the bank or provided to the bank are reported as being utilised and liquid assets are assumed to required to be sold into an unwilling market which will be reflected in the price at which they can be realised.

Two separate reports would be required: one measuring CZK liquidity risk, the other foreign currency liquidity risk. Each report is compiled according to the sample report shown on page 5 of this section.

It is possible that once the domestic market becomes more liquid and CSOB develops strong links with non-domestic counterparts that control can be maintained through a single consolidated report.

3.3.1. Assets.

- All non-negotiable assets [including call and notice monies given] are allocated into their respective maturity "time buckets", together with associated interest amounts due to be received.
- All negotiable assets [e.g. Treasury bills; CDs; etc] are included in the category "Sight to 1 week" subject to a discount which is set by asset quality. The discount represents the forced sale risk associated with non-liquid market conditions.
- The total of the minimum reserve requirement held at the CNB will be included in the "Sight to 1 Week" category.

- All incoming cashflows associated with foreign exchange transactions are allocated into their respective maturity "time buckets".
- The total of assets maturing in the "Sight to 1 Week" category will be adjusted **downwards** by the amount of all commitments given by the bank [e.g. committed but undrawn overdraft facilities; committed stand-by facilities; etc].

The reason for this is that it is possible that in the case of a major liquidity crisis all such facilities will be fully drawn within 1 week.

- All fixed assets are included in the category "> 1 Year".

3.3.2. Liabilities.

- All liabilities [including call and notice monies taken] are allocated into their respective maturity "time buckets", together with associated interest amounts due to be paid.
- All outgoing cashflows associated with foreign exchange transactions are allocated into their respective maturity "time buckets".
- The total of liabilities maturing in the "Sight to 1 Week" category will be adjusted **downwards** by the amount of all commitments granted to the bank [eg committed but undrawn overdraft facilities; committed stand-by facilities; etc].

The reason for this is that it is possible that in the case of a major liquidity crisis the bank will fully utilise all such facilities within 1 week.

- CSOB Capital will be included in the category "> 1 Year".

3.3.3. Cumulative Totals.

The cumulative totals of each category of Asset and Liability is computed and the ratio of Cumulative Assets to Cumulative Liabilities [CA/CL] is calculated for each time bucket.

3.3.4. Limits.

A limit will be set for the minimum ratio of CA/CL for individual time buckets. Limits will apply to both CZK and foreign currency liquidity reports.

4. Recommended Limits.

Sight to 1 Week	100%
> 1 Week to 1 Month	100%

For each of the categories cumulative cash inflows must be equal to or greater than cumulative cash outflows.

> 1 month to 1 Year **60%**

In this category cumulative cash inflows must be equal to or greater than 60% of cumulative cash outflows.

> 1 year **No limit necessary.**

The reduced requirement for the categories longer than 1 month is based on the assumption that central bank action should have resolved any major liquidity squeeze within that period, either in the domestic or international money markets.

5. Recommended discounts to be applied to negotiable paper.

Holdings of domestic Treasury Bills	0%
Holdings of domestic Government Bonds	5%
All other holdings	10%

6. Example Liquidity Profile.

Category	Sight-1w	>1w-1m	>1m-3m	>3m-6m	>6m-1y	>1 year
Assets in	1,945	1,457	968	1,297	7,275	7,987
G'tees etc	(475)	0	0	0	0	0
Cum Ass	1,470	2,927	3,895	5,192	12,467	20,454
Liabs out	1,648	1,209	6,385	5,866	929	5,000
G'tees etc	(150)	0	0	0	0	0
Cum Liab	1,498	2,707	9,092	14,958	15,887	20,887
CA/CL	98.13%	108.13%	42.84%	34.71%	78.47%	N/A
Limit	100%	100%	60%	60%	60%	N/A
Excess	** 28 **	0	* 1,560 *	* 3,783 *	0	N/A

N.B.

Final Cumulative Totals will not balance due to impact of guarantees etc and [any] holdings of negotiable assets whose maturity value is discounted for liquidity limit purposes.

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Section 5

Risk Measurement and the Control of Risk in Ceskoslovenska Obchodni Banka AS

Gap Analysis

Prague - July 28, 1994

Clive Grumball

Gap Analysis

1. Overview.

Gap Analysis has been used as a method of risk management and control for a considerable time.

Whilst it is by no means the optimum methodology for risk measurement it can be extremely helpful to the risk manager, despite the fact that of late it has become somewhat maligned as a methodology.

2. Gap Analysis in Practice.

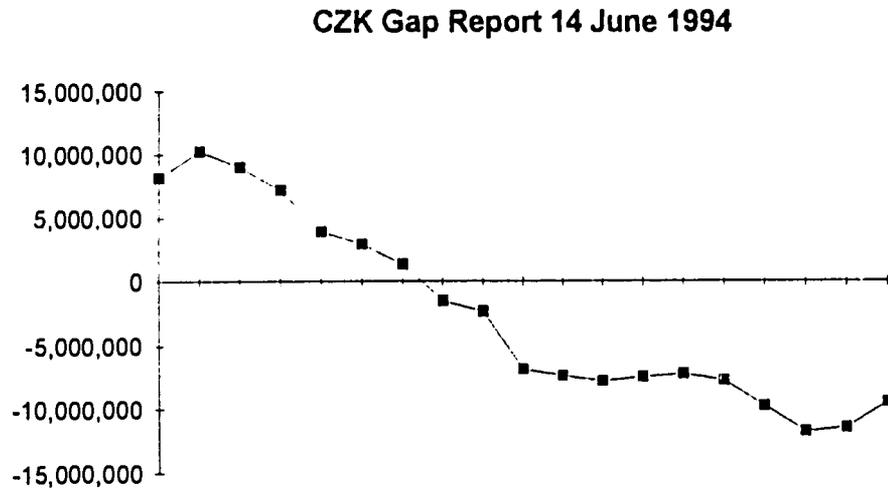
Essentially, the concept of Gap Analysis is to monitor the net difference in the total par value of assets less the total par value of liabilities re-pricing or maturing during a specific time period. If during a given time period the par value of assets exceeds the par value of liabilities then a positive gap will exist and so on.

The following portfolio is loosely based on the CZK Dealing Ladder [Report 0610B] as at 14 June 1994. It is presented in the format currently used, but is used for illustrative purposes only [i.e. the known deficiencies of the methodology of this report are ignored].

Maturity	Money On	Money Off	Gap	Cumulative
24 June 94	8,200,000	0	8,200,000	8,200,000
14 July	2,050,000	0	2,050,000	10,250,000
23 Sep		1,250,000	-1,250,000	9,000,000
4 Nov		1,800,000	-1,800,000	7,200,000
11 Dec		3,300,000	-3,300,000	3,900,000
24 Jan 95		1,000,000	-1,000,000	2,900,000
24 Feb		1,600,000	-1,600,000	1,300,000
16 Mar		2,800,000	-2,800,000	-1,500,000
18 May		800,000	-800,000	-2,300,000
16 Jun		4,600,000	-4,600,000	-6,900,000
15 Aug		500,000	-500,000	-7,400,000
13 Oct		425,000	-425,000	-7,825,000
29 Dec	300,000		300,000	-7,525,000
3 Feb 96	250,000		250,000	-7,275,000
15 Apr		500,000	-500,000	-7,775,000
21 May		2,000,000	-2,000,000	-9,775,000
7 Jun		2,000,000	-2,000,000	-11,775,000
31 Dec	275,000		275,000	-11,500,000
31 Dec 98 +	2,000,000		2,000,000	-9,500,000

The following diagram, perhaps, helps to gain some idea of the apparent risk profile:

Fig 1



Thus, as currently reported it would appear that a steadily reducing over borrowed position is being carried through to about end Feb 1995, from which point a steadily increasing over lent position is being carried.

This profile would be consistent with an expectation of increasing rates initially and decreasing rates subsequently.

However, reporting interest rate risk in this format can be misleading. The report shows an over lent position from 31 Dec 94 to infinity, which cannot be the case. This may result from the treatment of the Bank's capital / interest accruals / etc. in the report.

Perhaps, therefore, a better representation might be to assume that from 14 June 1994 all maturing deals are subsequently rolled on a straightforward overnight basis.

Eventually all exposures cancel themselves out leaving a zero trading position.

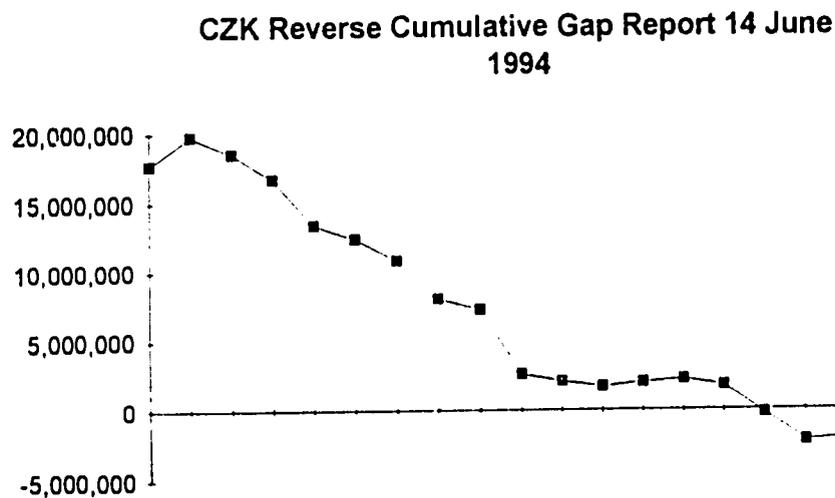
If the zero end position is used as the starting point a reverse cumulative gap report can be constructed as follows:

Maturity	Money On	Money Off	Gap	Rev. Cum
24 June 94	8,200,000	0	8,200,000	17,700,000
14 July 94	2,050,000	0	2,050,000	19,750,000
23 Sep 94		1,250,000	-1,250,000	18,500,000
4 Nov 94		1,800,000	-1,800,000	16,700,000
11 Dec 94		3,300,000	-3,300,000	13,400,000
24 Jan 95		1,000,000	-1,000,000	12,400,000

24 Feb 95		1,600,000	-1,600,000	10,800,000
16 Mar 95		2,800,000	-2,800,000	8,000,000
18 May 95		800,000	- 800,000	7,200,000
16 Jun 95		4,600,000	-4,600,000	2,600,000
15 Aug 95		500,000	- 500,000	2,100,000
13 Oct 95		425,000	- 425,000	1,675,000
29 Dec 95	300,000		300,000	1,975,000
3 Feb 96	250,000		250,000	2,225,000
15 Apr 96		500,000	- 500,000	1,725,000
21 May 96		2,000,000	- 2,000,000	- 275,000
7 Jun 96		2,000,000	- 2,000,000	- 2,275,000
31 Dec 96	275,000		275,000	- 2,000,000
31 Dec 98	2,000,000		2,000,000	0

As before this can be depicted diagrammatically as follows:

Fig 2



Reported in this way, the view being taken is shown as being an expectation of increases in interest rates [as indicated by the over-borrowed position] coupled with a sharp flattening of the yield curve [as expressed by lending to 31 Dec 1998 and funding this position until June 1996 in an amount of CZK 2,000,000,000].

The original purpose of gap analysis was to both monitor cash flow needs and to identify interest rate exposure. This was more or less possible when the markets only traded portfolios of conventional loans and deposits but as the markets evolved two separate exercises became necessary - one for monitoring liquidity needs and a separate method to identify interest rate risk. It is at this point where confusion was introduced.

Another early failing of gap analysis was to set the individual time buckets into a few, often wide, periods. Typically these were:-

- 0 - 30 days
- 1 - 3 months
- 3 - 6 months
- 6 - 12 months
- 1 - 2 years
- 2 - 5 years
- 5 + years

Such time buckets were far too insensitive to be effective but the problem can be overcome by reducing the time periods involved. i.e. sub-divide each gap period into smaller and smaller periods.

However, this methodology, is open to the criticism that it might be administratively difficult to achieve - despite modern technology - and could result in a risk manager having to perfectly match all cash inflows and outflows, which would be impossible in practice.

This criticism appears to result from the an inability to differentiate between liquidity risk management and interest rate risk management, which may stem from the origins of gap analysis. Effective liquidity management may often require perfect matching [as will be discussed in a separate paper] but interest rate risk management need not.

Gap analysis can form an effective part of an interest rate management process, but it can only do so if a risk manager has a sufficient level of detail available. Ideally this should break down exposure for each individual daily period.

It is also argued that a further weakness of gap technology is that it precludes a risk manager from taking discrete incremental steps to control exposure. It is claimed that to do so might introduce a domino effect into the exposure management process which would result from the risk manager's attempts to plug gaps.

It is argued that the process of plugging gaps creates a series of subsequent cash flows which in turn cause new gaps to appear in later periods. These gaps must also be plugged, thereby perpetuating the problem. However, this need not be the case, provided the gap report is sufficiently detailed, as can be demonstrated.

In the example shown on the previous page we showed a gap report which indicated an over-borrowed position for the period from 16 Jun 95 to 21 May 96 and over-lent for the period from 6 June 96 to 31 Dec 98.

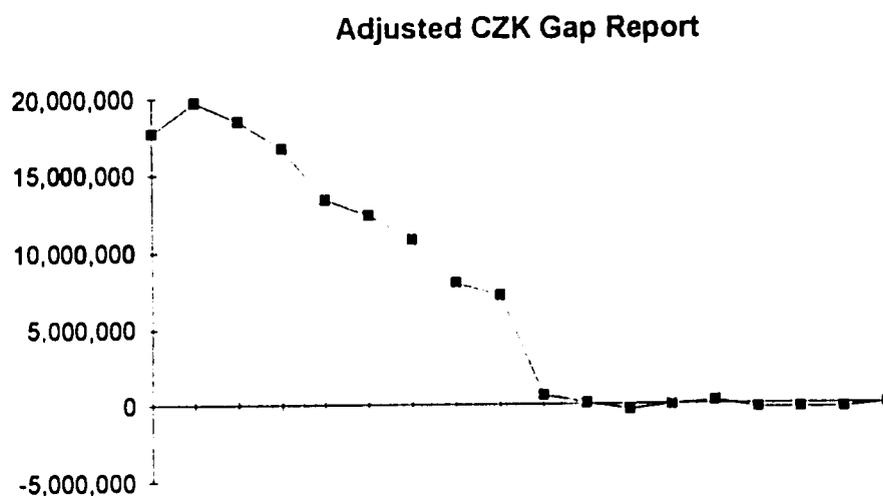
If it was required to eliminate these positions it would be possible to simply use [for example] FRAs to cover each period.



Let us assume we can sell an FRA for period 16 June 95 to 21 May 96 and buy an FRA for period 7 June 1996 to 31 Dec 1998, each in an amount of CZK 2 billion. The resulting impact on the Gap Report [with covered periods highlighted] will be:

Maturity	Money On	Money Off	Gap	Rev. Cum
24 June 94	8,200,000	0	8,200,000	17,700,000
14 July 94	2,050,000	0	2,050,000	19,750,000
23 Sep 94		1,250,000	-1,250,000	18,500,000
4 Nov 94		1,800,000	-1,800,000	16,700,000
11 Dec 94		3,300,000	-3,300,000	13,400,000
24 Jan 95		1,000,000	-1,000,000	12,400,000
24 Feb 95		1,600,000	-1,600,000	10,800,000
16 Mar 95		2,800,000	-2,800,000	8,000,000
18 May 95		800,000	- 800,000	7,200,000
16 Jun 95		6,600,000	-6,600,000	600,000
15 Aug 95		2,500,000	- 500,000	100,000
13 Oct 95		425,000	- 425,000	- 325,000
29 Dec 95	300,000		300,000	- 25,000
3 Feb 96	250,000		250,000	225,000
15 Apr 96		500,000	- 500,000	- 275,000
21 May 96	2,000,000	2,000,000	0	- 275,000
7 Jun 96	2,000,000	2,000,000	0	- 275,000
31 Dec 96	275,000		275,000	0
31 Dec 98	2,000,000	2,000,000	0	0

Fig 3.



If the same view was held when each FRA settles, the exposure could simply be removed by acquiring an asset or liability as appropriate, without fear of any domino effect in terms of interest rate risk.

It is clearly possible to take discrete incremental steps to control exposure. However, the critics may well be proved correct if the time buckets are indeed too wide.

We can show this as follows:

Assume 30 June 1994 CSOB reports the following exposures in the format specified for MIS:

	1 M	2 M	3 M	4 M	5 M	6 M	12 M	over
Assets	19,750	0	0	0	0	0	0	2,825
Liabs	0	0	0	1,250	1,800	3,300	6,200	10,025
Net	19,750	0	0	-1,250	-1,800	-3,300	-6,200	-7,200
Cum	19,750	19,750	19,750	18,500	16,700	13,400	7,200	0

Assume now that management instructs that all reported gaps are to be hedged at all times and that, initially, to do so the following FRAs are dealt:

- 1 v 4 30 Jul to 30 Oct sell 1,250,000,000
- 1 v 5 30 Jul to 30 Nov sell 1,800,000,000
- 1 v 6 30 Jul to 30 Dec sell 3,300,000,000
- 1 v 12 30 Jul to 30 Jul 95 sell 6,200,000,000
- 1v 13 30 Jul to 30 Aug sell 7,200,000,000

This should produce the following report.

	1 M	2 M	3 M	4 M	5 M	6 M	12 M	over
Assets	19,750	0	0	1,250	1,800	3,300	6,200	10,025
Liabs	19,750	0	0	1,250	1,800	3,300	6,200	10,025
Net	0	0	0	0	0	0	0	0
Cum	0	0	0	0	0	0	0	0

But what happens to the report the next day [1 July] if the underlying positions on 30 June were in fact:

Assets

Placed to 2 Jul 1994 19,750,000,000
 Placed to 7 Jul 1995 2,825,000,000

Total 22,575,000,000

Liabilities

Taken to 7 Oct 1994 1,250,000,000
 Taken to 7 Nov 1994 1,800,000,000

Taken to 7 Dec 1994	3,300,000,000
Taken to 7 Jul 1995	6,200,000,000
Capital; Long Term Funding	10,025,000,000
Total	22,575,000,000

The July 1 report will show:

	1 M	2 M	3 M	4 M	5 M	6 M	12 M	over
Assets	19,750	1,250	1,800	3,300	6,200	7,200	0	2,825
Liabs	19,750	0	1,250	1,800	3,300	0	6,200	10,025
Net	0	1,250	550	1,500	2,900	7,200	-6,200	-7,200
Cum	0	1,250	1,800	3,300	6,200	13,400	7,200	0

On the face of it, therefore, if the strategy is to hedge out all exposures, further action is required, and required.....

3. Principal Advantage of Gap Analysis.

The main advantage of Gap Analysis, which is often overlooked, is that it is one of the few methods of risk evaluation which enables a risk manager to see the actual pattern of his risk exposure [as the diagrams demonstrate]. Obviously the greater the level of detail available the better, especially as there are few associated systems difficulties.

4. Weaknesses of Gap analysis.

However, there are real weaknesses of Gap Analysis.

4.1. Gap Analysis is incapable of differentiating between the different types of trading risk.

More often than not all financial market products traded within an institution are lumped together in one big risk pot and portrayed in a single Gap Report. The institution then sets limits based on its tolerance to risk by expressing risks within the overall portfolio as being a maximum gap for a particular period or series of periods.

Consider the following:-

A dealer:

- Enters into a five year interest rate swap paying fixed rate interest against receiving three month LIBOR.
- Purchases a five year Government Bond whose cash flow dates exactly match the swap.

- Issues a three month Certificate of Deposit.

[Amount 50 million units.]

In a Gap Report these positions would be reported as follows:-

Maturity		Assets maturing		Liabilities Maturing	Gap	Cum Gap
3 months	swap	50.0	cd	50.0	0	0
60 months	bond	50.0	swap	50.0	0	0

From the Gap Report it can be seen that the dealer's position appears to be risk neutral. But the relationship between the yield on one instrument and another is rarely constant, indeed it can alter quite dramatically, particularly where there is a difference in the perceived credit risk between the two.

In October 1987 for example the relationship between US Treasury Notes and US Dollar interest rate swaps moved from a position where swaps traded at rates which were approx 90 basis points over Treasury Note yields to 120 basis points over Treasury Note yields within a 24 hour period whilst fundamental interest rates remained unchanged.

If such a situation applied to the above position and it was [say] closed out at the most inopportune time a loss would result of 750,000 units approximately - from a position which appeared to be free of market risk.

4.2. Gap Analysis is incapable of demonstrating different calculation methodologies and assumptions made within individual products.

Consider the above situation but assume that the bond was issued with a coupon of 9 per cent and was purchased to yield 10 per cent to maturity.

The calculation of the yield to maturity by market convention assumes that total proceeds invested (i.e. cash paid at inception together with ALL future coupon receivables) are invested at 10 per cent

Failure to achieve this re-investment rate would result in a potential loss to that position.

4.3. Gap Analysis cannot provide immediate information to the user of the actual magnitude of potential cash losses resulting from risks being assumed.

By and large, gap limits are set as arbitrary numbers with little or no regard or concept of what are the actual implications to the Profit and Loss account of the user.

This is perhaps the greatest failing of Gap Analysis.

4.4. Gap Analysis is incapable of effectively dealing with contingent exposures such as written options.

It is possible to incorporate options purchased specifically to hedge existing book exposures by recording them as if they had been exercised. However, in the case where options are purchased as trading vehicles, or in cases where options are written, the situation becomes far less clear.

5. Recommended Use of Gap Analysis in CSOB.

As discussed earlier, Gap Analysis may have a role to play in the control of risk but the numerous inherent deficiencies realistically eliminate it as the primary means of interest rate risk control.

It is recommended that Gap Analysis is used as one of the tools for controlling factor in the bank by the Treasurer / ALCO.

- Under the proposed new reporting format the profile of the bank's interest rate risk will be considered by reference to the interest gaps being carried.
- Based on the result of this exercise the Treasurer in liaison with ALCO will decide:
 - whether, as a strategic exercise, all or part of the current risk exposure should be hedged or, alternatively, a strategic risk position taken.
 - whether the current maximum permitted level of TRUs allocated to the dealing room is appropriate or should be reduced / increased.

6. Systems Implications.

6.1. IBIS

In general, IBIS is capable of producing a number of reports for Gap Analysis.

However:

- IBIS cannot currently position FRAs and other derivatives in any risk report.
- A number of products could be processed but are not and some products are currently being incorrectly processed.
- The new reporting format was specified some 6 months ago but there still appears to be no realistic production date for its use in CSOB.

However, it is recognised that for the new format to be effective, it must be

supported by detailed gap reports which break down the exposures into daily "time buckets". Failure to do so may well result in instances of "domino effect" from attempts to plug gaps described earlier in this paper.

6.1. FEDS

Valuta has screen based Gap Reporting. It also claims to be able to produce hard copy consolidated Gap Reports - but this has yet to be substantiated.

It is assumed that Gap Reports will be available to CSOB's specification. As such management will at least have something on which to base its use of Gap Analysis.

This, however, does not negate the requirement for similar IBIS produced reports.

Section 6

**Risk Measurement and the Control of Risk
in Ceskoslovenska Obchodni Banka AS**

Simulation Analysis

Prague - July 28, 1994

Clive Grumball

Simulation Analysis.

1. Background

Simulation Analysis is the process which involves subjecting a portfolio to a series of assumptions about future market conditions.

This method will enable the identification of potential interest rate exposure. It will also help CSOB to become familiar with the consequences of market actions on potential problems.

In addition, it will help to identify the critical components of the impact of foreign exchange and interest rate risk to CSOB and, importantly, it requires the bank to take a prospective rather than retrospective look at its risk exposure.

However to be truly effective Simulation Analysis requires numerous rate forecasts and, as a result, it can be an intensive and time consuming process. These are major disadvantages to an active trading portfolio.

As a consequence Simulation Analysis could not realistically be used as a risk management tool for Department 21 but it should be used in the overall risk management strategy of Senior Management.

2. Basic Simulation Processes

At its most fundamental level simulation analysis typically focuses on two particular measures of risk:

- Market sensitivity
- Weighted market sensitivity.

2.1. Market Sensitivity

This is a measure of risk that describes the amount of change that an individual portfolio is exposed to for a given shift in interest rates or currency across the entire portfolio.

Typically, four measures of market sensitivity will be considered by risk managers:

- Sensitivity to FX rate shifts - FX Shift Sensitivity
- Sensitivity to a uniform parallel shift in interest rates - Parallel Shift Sensitivity.
- Sensitivity to a parallel shift in interest rates in an individual section of the yield curve. - Segment Shift Sensitivity.

- Sensitivity to a uniform shift in implied volatilities - Volatility Shift Sensitivity.

2.1.1. FX Shift Sensitivity.

FX Shift Sensitivity identifies the change in the value of a portfolio caused by a standard shift of [say] 1% in all exchange rates relative to CZK.

The FX Shift Sensitivity of each position is the change in its value when the derived mark to market value is converted into CZK at the current spot rate and then at the spot rate after the foreign currency has appreciated relative to CZK.

Each FX Shift Sensitivity within the portfolio is aggregated to give the overall FX Shift Sensitivity.

2.1.2. Parallel Shift Sensitivity

The Parallel Shift Sensitivity defines the change in value of each position within the portfolio, and for the portfolio as a whole, that is brought about by the change in the mark to market value of each asset / liability after a pre-defined parallel shift in the underlying yield curve.

The mark to market value of each asset / liability is calculated in the first instance from the current zero coupon curve. The underlying curve is then shifted throughout by a pre-defined standard amount and a new mark to market value of each asset / liability calculated from the resulting zero coupon curve.

The difference between the two values represents the Parallel Shift Sensitivity.

2.1.3. Segment Shift Sensitivity.

Segment Shift Sensitivity differs from Parallel Shift Sensitivity in that it concentrates on single segments of the yield curve rather than the whole curve. For example, a yield curve factor sensitivity can be calculated by shifting only the segment of the yield curve from [say] 9 months to 1 year by a pre-defined standard amount.

As with the Parallel Shift Sensitivity, the mark to market value of each asset / liability is calculated in the first instance from the current zero coupon curve. The relevant segment of the underlying curve is then shifted by the standard amount and a new mark to market value of each asset / liability calculated from the resulting zero coupon curve.

2.1.4. Volatility Shift Sensitivity.

Volatility Shift Sensitivity describes the change in value of each option position that is brought about by a standard movement [say 1%] of all implied volatilities.

The mark to market value of an option is derived by using the price of the underlying instrument and the implied volatility of that instrument within an options pricing model. The implied volatility is then adjusted by the standard shift and the option repriced.

The difference between the two valuations represents the Volatility Shift Sensitivity of the option and, when aggregated, the sensitivity for the portfolio.

2.2. Weighted Market Sensitivity.

Weighted Market Sensitivity is a measure of risk that identifies the probability weighted sensitivity of a portfolio based on the standard deviation of historical data and the covariance between various markets.

In order to derive the Weighted Market Sensitivity of a portfolio it is necessary to calculate the variance [standard deviation] of the value of the assets / liabilities within the portfolio using historical data, and then to calculate the total probable variance of the portfolio weighted by the correlation between the constituent elements of the portfolio.

The correlation between assets / liabilities is defined by a Covariance Matrix which can be based on returns over a specified period [say 250 business days].

A specified number of standard deviations [say 2] - both plus and minus - is applied to the current yield curve to give their positive and negative probable shift in value.

The probable shift in value of each asset / liability is then used to compute the Weighted Market Sensitivity of the portfolio. This is done by applying the value of each asset / liability to each "cell" in the Covariance Matrix. The resulting number for each asset / liability can then be multiplied by its weighting within the portfolio.

The results of this process will then be aggregated to produce the Weighted Market Sensitivity of the portfolio.

2.2.1. Weighted FX Shift Sensitivity.

To arrive at the Weighted FX Shift Sensitivity the current spot rates are shifted both up and down by the amount of [say] 2 standard deviations, and the CZK value of each element of the portfolio is calculated and compared to the spot valuation.

2.2.2. Weighted Parallel Shift Sensitivity.

The Weighted Parallel Shift Sensitivity is calculated by shifting each point in the current yield curve both up and down by [say] 2 standard deviations to arrive at the probable variance for the whole yield curve. The zero coupon curves are then calculated from which each asset and liability is revalued.

2.2.3. Weighted Volatility Shift Sensitivity.

The standard deviation of historical implied volatilities is used to calculate the Weighted Volatility Shift Sensitivity of option positions within the portfolio.

A multiple [say 2] of the standard deviations of the implied volatility of individual options are added to and subtracted from the current implied volatility and the option repriced using the new volatility.

These revaluations are aggregated and the result compared with the spot valuation to give the Weighted Volatility Shift Sensitivity.

3. Arbitrary Sensitivity Analysis.

Ideally, sensitivity analysis should be extended to provide CSOB with the ability to specify any combination of the following analysis to provide total flexibility of risk scenario to the Treasurer:

- Yield shifts
- Foreign Exchange shifts.
- Horizon analysis.
- Implied volatility changes.

3.1. Yield Shifts.

This analysis should allow for any segment of any yield curve to be shifted in a non-uniform manner.

3.2. FX Shifts.

This analysis should allow for any given shift of any currency against CZK and the position held revalued at the new rate.

3.3. Horizon Analysis.

As well as being able to specify shifts in the underlying interest and FX rates, CSOB should consider specific shifts in time to determine the value of each element of a portfolio at any specified date in the future.

In particular this allows the bank to take account of maturities and expirations of futures and options contracts.

All yield curves are shifted forward in time by the specified amount and each element of the portfolio re-valued off the new resulting zero coupon curve, taking into account their revised cash flows.

3.4. Implied Volatility Changes.

Options within the portfolio are re-priced according to CSOB's specified arbitrary shifts in implied volatilities.

4. Recommended Use of Simulation Analysis in CSOB.

It is recommended that Simulation Analysis is used as a controlling factor in the establishment of the TRU total currently applicable in the bank.

- Each month [say] the current mark to market value of the bank's equity will be compared to the worst case scenario resulting from a Simulation Analysis exercise based on each of the techniques outlined in this paper.
- Based on the result of this exercise management will decide:
 - a). Whether the current maximum permitted level of TRUs is appropriate or should be reduced / increased.
 - b). Whether, as a strategic exercise, Global Treasury should hedge all or part of the current risk exposure / take a strategic risk position.

5. Systems Implications.

There are significant systems implications in the introduction of Simulation Analysis in CSOB.

It would appear that Valuta has some modelling capability, but this was only demonstrated where it applied to individual trading positions. ALCO type risk management capability was not demonstrated although some of the underlying calculations were evident [e.g. instrument duration and basis point value].

It is possible that the level of simulation capability required will need to form part of the specification process with Valuta.



Section 7

**Risk Measurement and the Control of Risk
in Ceskoslovenska Obchodni Banka AS**

Duration Analysis

Prague - July 28, 1994

Clive Grumball

at

Duration Analysis.

1. Overview.

Duration Analysis is a relatively new technique that has rapidly become a standard risk management tool.

In concept, the purpose of duration is to identify the magnitude of an institution's interest rate exposure but in such a way that it forms an advancement on the more basic methods such as Gap Analysis. This is achieved by attempting to focus on the one area where Gap Analysis is weakest i.e. it cannot quantify the potential risk to a position in terms of a cash value.

Duration has its roots in the combination of methods used by:

- Money market managers who were seeking ways to express the risks they had assumed in a format which would readily translate into the total cash at risk from a portfolio.
- Investment managers who measured the risk of their portfolio in terms of its "Basis Point Value", which is defined as being equal to the change in price of a given instrument for a one basis point move in its yield.

2. Approach of Money Market Managers.

In essence there are a number of ways in which money market managers attempt to achieve their aims. Essentially they choose simple bench mark instruments, either real or theoretical, and convert risk positions into equivalent positions taken in the chosen bench mark.

The three most popular versions of this method are as follows:-

- Milli-Months
- Milli- Quarters [also known as Futures Contract Equivalents]
- Milli-Years [also known as One Year Equivalents]

2.1. Milli-Months.

In the case of milli-months the risk position of a portfolio is expressed in terms of its equivalent amount in millions of currency units with a maturity of one month. [e.g. CZK 1,000,000 for a period of 12 months is equivalent to CZK 12,000,000 for a period of 1 month . The risk position would be described as being 12 milli-months of risk.]

If this methodology is applied to the CZK money position considered under Gap Analysis it would report that CSOB's interest rate risk on 14 June 1994 equated to the following milli-month position:

Maturity	Money On	Money Off	Gap	Milli-months
24 June 94	8,200,000	0	8,200,000	2,695.890
14 July 94	2,050,000	0	2,050,000	2,021.918
23 Sep 94		1,250,000	-1,250,000	- 4,150.685
4 Nov 94		1,800,000	-1,800,000	- 8,462.466
11 Dec 94		3,300,000	-3,300,000	-19,528.767
24 Jan 95		1,000,000	-1,000,000	- 7,364.384
24 Feb 95		1,600,000	-1,600,000	- 13,413.699
16 Mar 95		2,800,000	-2,800,000	- 25,315.068
18 May 95		800,000	- 800,000	- 8,889.863
16 Jun 95		4,600,000	-4,600,000	- 55,502.466
15 Aug 95		500,000	- 500,000	- 7,019.178
13 Oct 95		425,000	- 425,000	- 6,790.685
29 Dec 95	300,000		300,000	5,552.877
3 Feb 96	250,000		250,000	4,923.288
15 Apr 96		500,000	- 500,000	- 11,030.137
21 May 96		2,000,000	- 2,000,000	- 46,487.671
7 Jun 96		2,000,000	- 2,000,000	- 47,605.479
31 Dec 96	275,000		275,000	8,417.260
31 Dec 98	2,000,000		2,000,000	109,216.438

Example calculation of a milli-month exposure.

Consider position on 24 June.

Net exposure [gap] = 8,200,000,000

*Duration of exposure = 10 days = 10 / 365 * 12 months = 0.328767 months*

*Milli-month exposure = 8,200,000,000 / 1,000,000 * .328767 * 12 = 2,695.89*

The positive and negative positions are offset against one another to give the net open risk position.

In this case the total risk being run within the bank would be shown as **minus** 128,732.877 "milli-months". In other words it was equivalent to CSOB having lent 128,732,877,000 for a period of 1 month.

Using this system CSOB would be able to readily establish the approximate detrimental affect to the profit and loss account which might result from a defined rate shock of [say] 100 basis points.



In this instance, if interest rates rose by 100 basis points the position would produce a loss of CZK 107,277,397 [i.e. $128,732,877,000 * 30/360 * 1/100$].

2.2. Milli-Quarters [Futures Contract Equivalents]

In the case of futures contract equivalents the risk position of a portfolio is expressed in terms of its equivalent amount in futures contracts with a maturity of 1/4 of a year. [e.g. If a deposit futures contract existed in CZK in an underlying amount of CZK 1,000,000 per contract, CZK 1,000,000 for a period of 12 months is equivalent to 4 futures contracts.]

Applied to the 14 June 1994 portfolio would result in a position of 42,910 959 futures contracts bought.

As before, CSOB would be able to readily establish the approximate detrimental affect to the profit and loss account which might result from a defined rate shock of [say] 100 basis points.

Once again, an interest rate rise of 100 basis points would produce a loss of CZK 107,277,397 [i.e. $42,910,959,000 * 90/360 * 1/100$].

2.3. Milli-Years [One Year Equivalents]

In the case of one year equivalents the risk position of a portfolio is expressed in terms of its equivalent amount in millions of currency units with a maturity of one year. [e.g. CZK 1,000,000 for a period of 6 months is equivalent to CZK 500,000 for a period of 1 year.]

The 14 June position would thus equate to **minus** CZK 10,727,739,700 "one year equivalents". In other words it was equivalent to CSOB having lent 10,727,739,700 for a period of 1 year.

Using this system, CSOB would be able to readily establish the approximate detrimental affect to the profit and loss account which might result from a defined rate shock of [say] 100 basis points.

In this instance, if interest rates rose by 100 basis points the position would produce a loss of CZK 107,277,397 [i.e. $10,727,739,700 * 360/360 * 1/100$].

NB

Whichever method chosen produces the same P L impact to the exposure under the chosen interest rate scenario. However milli-month measurement for risk control purposes is available on IBIS - the others are not.

3. Approach of Investment Managers.

As the markets have developed, and in particular as trading has extended more and more often to maturities exceeding one year, it has become necessary to evolve this process further. This has been achieved by expressing risk of an instrument or portfolio in terms of the maturity of a zero coupon bond that would result in the same percentage price exposure as the instrument or portfolio being measured.

Under this methodology, Duration Analysis considers the individual cash flows of an instrument as follows:

- Each cash flow is discounted to obtain its present value.
- Each cash flow is then time weighted and the average time weighted value of these cash flows is determined.
- This result is then reported as the duration of that instrument expressed in years.
- The portfolio duration is subsequently established as the aggregate of the duration of individual instruments.

Duration is a measure of the average length of exposure to interest changes. The longer the duration, the riskier the instrument. It is expressed in years or coupon periods.

Duration is given by the formula:

$$\text{Duration} = \frac{\sum_{t=0}^{t=n} \text{CFI}_t * \text{PZ}_t * t}{\sum_{t=0}^{t=n} \text{CFI}_t * \text{PZ}_t}$$

Where:

- I = Financial Instrument
- t = Time
- n = Final cash flow period
- CFI_t = Cash flows of instrument I occurring at time t
- PZ_t = Market determined price of a zero coupon bond maturing at time t.

Let us look at an example to see how this formula works in practice. For simplicity a standard discount rate of 8% is used throughout.

Consider a bond with a coupon of 8% which is trading at par.

Time t	Cash Flow CF _t	Zero Coup price PZ _t	Req Mkt Value CF _t * PZ _t	Weighted CF _t *PZ _t *t
1 year	8.00	0.925925925	7.4074	7.4074
2 years	8.00	0.857338820	6.8587	13.7174
3 years	8.00	0.793832241	6.3507	19.0520
4 years	8.00	0.735029852	5.8802	23.5210
5 years	108.00	0.680583197	73.5030	367.5149
Totals			100.0000	431.2127

$$\text{Duration} = \frac{431.2127}{100.0000} = 4.31 \text{ years}$$

The theory behind duration is that, any increase in market rates [and corresponding decrease in the bond's value] will be partially off-set by the re-investment of the coupon payments at higher rates. This effectively lowers the exposure from the actual maturity of 5 years, to a weighted average of 4.31 years.

This is what the duration of the bond just considered is indicating. There is, however another way of looking at duration. i.e. Modified Duration.

Modified duration is the percentage change in a bond's present value for a 100 basis point change in the discount rate [market yield]. It is calculated by discounting an instrument's duration by its yield to maturity [YTM].

For an instrument with an annual coupon:

$$\text{Modified duration} = \frac{\text{Duration [in years]}}{[1 + \text{YTM}\%]}$$

In the case of the example above, the modified duration will be 3.99 [= 4.31 / 1.08].

Modified duration indicates the percentage change in a bond's price for a 100 basis point change in yield. It can subsequently be used to determine what this means in real cash term.

However, 100 basis points represents a larger shift in interest rates than dealers typically consider. Therefore, they consider the cash profit or loss on an instrument for a single basis point [0.01%] movement. This is measured by Basis Point Value or BPV which some dealers call "the value of an 01", where "01" stands for 0.01%.

In the example above a 1% change in price produces a 3.99% change in price. A 0.01% fall in the yield to maturity will, therefore, produce an increase in price of \$100 * 3.99% / 100 = \$0.04. Thus, the bond's new price will be 100.04.

4. Advantages of Duration Analysis.

Whichever method of expressing risk as a risk equivalent is used it can help a risk manager in a number of ways.

- It enables the risk manager to quantify a perhaps very complex portfolio in terms of a single common denominator.
- It enables him to quantify to a reasonable extent what his potential cash at risk will be.
- It offers the risk manager a way in which he can construct more economic hedges for his portfolio by selecting these to take advantage of any value which exists in the yield curve.
- It can also be used for analysing balance sheets. [e.g. Asset / Liability managers can compute the duration of equity as one of the components of balance sheet management.]
- It can help overcome one of the weaknesses of Gap Analysis in that it readily shows the risk differences between different instrument types which share similar maturities.

For example instruments which have identical maturities but differing coupons will have different durations.

- It readily allows calculation of cash at risk for a given yield curve shift for the portfolio as a whole.
- It can be used to measure exposure in options.

An options duration = $D_u \times (P \Delta o / P \Delta u) \times (P_u / P_o)$

where:

D_u = Duration of underlying instrument.

$P \Delta o / P \Delta u$ = The price change of the option relative to the price change of the underlying instrument.

(P_u / P_o) = The price of the underlying instrument relative to the price of the option.

5. Disadvantages of Duration Analysis.

However, despite these benefits duration analysis falls short as a truly effective method for controlling risk in that:

- It remains a somewhat clumsy method which requires a fairly considerable degree of systems capability to calculate, particularly in the case of exposures which are measured in terms of zero coupon bonds.
- It tends to concentrate on adverse interest rate movements which take the form of a parallel shift in the yield curve.
- It tends to focus on a portfolio as a whole which can present problems where a portfolio is multi-product.

For example it may be appropriate to express the risk of a portfolio of bonds in terms of its duration, but is it necessarily appropriate to express the risk of a portfolio of long dated forward foreign exchange positions in terms of its duration? The results of such a portfolio can depend not only on the interest rate levels in both relevant currencies, but also on the spot exchange rate between them.

- It does not recognise basis risk.
- Duration analysis is not a static analysis. As interest rates change, so too will the duration of an instrument. This phenomenon is known as "duration drift" or "convexity". This drift occurs because prices and yields do not change linearly, but rather have varying rates of change.

Convexity is particularly important for portfolios which are anticipated to be duration neutral, since an imbalance may well result from a change in interest rate levels. As a result these will need to be dynamically managed, and steps taken to make any adjustments necessary to maintain balance.

6. Recommended Use of Duration Analysis in CSOB.

It is recommended that Duration Analysis is used as a controlling factor by enabling management to determine the duration of CSOB's equity

- Each month [say] the duration of the bank's equity [DE] expressed in years will be calculated by the following formula:

$$DE = DA - [DL * W]$$

where:

DA = Duration of Assets expressed in years

DL = Duration of Liabilities expressed in years

W = Total of Assets / Total of Liabilities

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- Based on the result of this exercise management will decide whether, as a strategic exercise, Global Treasury should hedge all or part of the current risk exposure / take a strategic risk position.

7. Systems Implications.

There are significant systems implications in the introduction of Duration Analysis in CSOB.

Valuta calculates the modified duration and basis point values for fixed interest securities, but there has been no evidence that this can be extended across all products.

In theory, if it was not currently available, this should not present a major problem. However, it would need to form part of the FEDS specification for CSOB's needs .

TECHNICAL ASSISTANCE PROGRAMME
TO
CESKOSLOVENSKA OBCHODNI BANKA A.S.

WORKPLAN
FOR THE STRENGTHENING OF
THE PROBLEM LOAN DEPARTMENT.

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
CONTRACT NUMBER EUR-0014-I-00-1056-00.

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1 Introduction

This work is carried out under the USAID contract number EUR-0014-1-00-1056-00 in accordance with the TOR contained therein. The project covers the Problem Loans/Workout department.

Work commenced on this module on the 7th September 1994. The first task under the TOR is for the consultant to understand the Bank and the environment within which it operates and to prepare a project plan. As at the date of writing, many of the dates are estimates and it is believed that target dates and time frame may require adjustment once the full facts are to hand.

The role of the Bank's workout function is currently being defined and restructured. Consequently, the workplan is intended to be flexible so that effort may be directed to those areas which are identified by the Bank as being of the highest priority.

The requirements of the TOR have been adhered to closely in the construction of this plan. However, the sequential arrangement has been restructured so that this now follows the logical format of first assisting with the establishment of the workout function and the defining of functional responsibilities, together with the development of appropriate policies, procedures and the necessary early warning systems.

This module is essentially the planning stage, at the end of which, the range of deliverables required by USAID, will be provided in the format of a single comprehensive workout guide. This guide will include policy recommendations, suggested reporting formats, sample covenants, etc. Since the Bank is currently in the process of producing a Credit Policies and Procedures Manual, it is worthwhile considering the possibility of the guide forming the Bad Loan and Workout section of this manual.

Once the planning stage is complete and deliverables have been provided, then the emphasis will switch to an analysis of the structure of the problem and non-performing loan portfolio, with a view to ascertaining whether all under performing exposures have been identified. The intention is to gather information, in order that the Bank may, over a period, produce an action plan for each classified exposure, leading to an overall design for portfolio resolution. This then leads into involvement with a more hands on role, with a view to assisting with the strengthening of the department.

This role continues directly into the final stage of the project where the consultant will be involved in the day to day operation of the department, assisting, training and explaining as required.

Although each phase of the work is independent and can stand alone as a separate work module, it is intended that phases should overlap and inter-relate with the module which follows.

This is intended to maximise the use of available time, in order to avoid the difficulties and delays in obtaining information which to date have characterised this project.

A section in respect of additional factors, which require consideration but do not fall clearly within the ambit of this contract, are appended at the end of this workplan, as is a list of meetings which it is requested be arranged as soon as is possible.

2 Workplan Summary

PHASE ONE

ASSIST WITH AND PROVIDE ADVICE REGARDING THE ESTABLISHMENT OF THE PROBLEM LOAN AND WORKOUT DEPARTMENT IN HEAD OFFICE AND THE WORKOUT FUNCTION IN THE BRANCHES.

To undertake this work, the following activities must be carried out:

- a) Establish the Bank's requirements.
- b) Provide advice on an information request to and a reporting format from the branches for information capture.
 - . Select branch to test questionnaire.
 - . Test quality of response by direct investigation.
- c) Review relevant legislation and the legislative environment.
- d) Visit branches.
- e) Help with the establishment of departmental and functional responsibilities and authority.
 - . Define and agree departmental role.
 - . Define and agree structure of the workout effort in Head Office and elsewhere as appropriate.
 - . Define and agree staffing and operating requirements.
 - . Prepare and agree job descriptions and functional reporting lines.
 - . Consideration as to training requirements.
 - . Discretionary authorities in the workout function.
- f) Assist the bank with the development of policies and procedures, to include monitoring systems, loan review procedures, covenants, design of forms, etc.
 - . Agree classification criteria.
 - . Accruing/Non-accruing interest.
 - . Authority for provisions and write-offs.
 - . Review of existing analysis system.

- . Consideration of the concept of value.
 - . Review of the decision making process.
 - . Recovery techniques.
 - . Debt/Equity swaps.
- g) Assist with the development of an early warning system for identification of under performing credits.

DELIVERABLES:

- i) Policy recommendation for the Problem Loan Department.
- ii) Policy recommendation for the early detection of problem loans.
- iii) Copies of recommended forms - Action Plans, Approval Memos, Status Reports, etc.

These will be provided in the format of a single comprehensive guide which will eventually form or can be adapted to form, a section of the Bank's Credit Manual. Where appropriate and time permits, guidelines and pointers will be provided.

PHASE TWO

ASSIST WITH THE DEVELOPMENT AND RUNNING OF THE WORKOUT FUNCTION IN THE BANK.

This function will assist with the following sectors:

- a) Analysis of the information provided by the branches.
- b) Identification of under performing credits.
 - . Decision as to where the exposure will be managed and the degree of discretion permitted.
 - . Review of classifications and provisions in conjunction with Credit Policy Department and the team that is working on developing the Bank's credit manuals.
- c) Development of an action plan for portfolio management and an overall plan for portfolio resolution.
- d) Hands on assistance in order to:
 - Strengthen department.
 - Restructure loans.
 - Address third world bank credits with a view to ascertaining the Bank's requirements.

PHASE THREE

WORKING AND TRAINING ON THE JOB.

- a) Train by example/explanation. A hands on role, analysing and working out problem credits.
- b) Seminars if necessary /appropriate.
- c) Outside training if required.

ADDITIONAL CONSIDERATIONS

Where time and costs permit, effort will be allocated to:

- . Input re' frauds.
- . Considerations re' a Loan Review function.
- . Conflict of Interest.
- . Relationship with the State.
- . Loss of "good" business by the Bank.

3 Phase One

ASSIST WITH AND PROVIDE ADVICE REGARDING THE ESTABLISHMENT OF THE PROBLEM LOAN AND WORKOUT DEPARTMENT IN HEAD OFFICE AND THE WORKOUT FUNCTION IN THE BRANCHES.

In the initial stage it is imperative to establish what the Bank requires from the workout process so that the necessary advice may be prepared. This phase is critical to the success of the project, since it is at this stage that all planning and preparation will be undertaken in order to establish the structure of the workout process.

A task of primary importance, which will take time to implement, is the capture of information in respect of the Bank's portfolio of loans and other exposures. A detailed questionnaire will be drawn up and circulated to all branches of the Bank, in order that the workout function may set up a database of all classified exposures. Prior to being distributed to the branch network the questionnaire will be tested on a single branch and the responses checked by direct inspection. Enquiry will be made in order to ascertain whether information requirements can be derived from the books of the Bank, maintained on the IBIS computer system, or whether regular (monthly?) reporting will be required, in order that the database may be kept up to date.

Subsequently, all relevant legislation will be reviewed, including but not limited to, the Commercial Code, Civil Code, Banking Act, Bankruptcy Act and other relevant financial legislation, directives and decrees.

Meetings will be scheduled with the Bank's lawyers, together with outside counsel where appropriate, in order to discuss the legal and regulatory environment as regards the current position in the Czech Republic and Slovakia, and also to obtain input on any legislation currently before either Parliament or otherwise in the pipeline, which might impact on the financial environment in general and the banking system in particular.

Visits will be scheduled to several key branches for minimum periods of at least two days each, with a view to understanding both the credit approval process and the quality of staff in the credit process in the branches. Prague Branch is a key branch with which to meet, since it represents over 50% of the Bank's loan portfolio and a similar period should be spent with the branch in Bratislava given the different legal and regulatory environment in Slovakia. A period of at least one day should be spent with one or two other branches and it is suggested that these should be those branches identified by the Bank as having respectively, the best performing and worst performing loan portfolios.

The exact structure and role of the Bad Debt and Workout Department must also be defined. For example, is the department to be responsible for only those exposures classified "doubtful" or "loss", or is it also to accept control of those exposures

which with intensive care may either recover or at the least be subject to an orderly liquidation. Consideration will also be given to whether this department should accept responsibility for only the distressed loan portfolio, or whether responsibility for either distressed investments or distressed banking relationships, should fall under the department's aegis. Decisions will be required as to the point at which a classified relationship is transferred to the workout department.

Agreement must be reached as to whether the department will be centralised wholly at Head Office or whether it will be possible to adopt a more decentralised approach with for instance a subordinate workout department responsible for Slovakia, situate either in Bratislava, or at the least as a sub-section within the Head Office department. Additionally, decisions will be required as to whether there will be a workout officer or workout department in each branch and if so the method of appointment of the staff member(s) and their direct and functional responsibilities and reporting lines. Once these decisions have been made, consideration can then be given to the structure and staffing requirements of the department.

Consideration will also be given as to the Bank's policy regarding use of legal counsel and whether the workout function should have its own lawyers in situ or if it should have the general use of the Bank's legal department or priority use of a few specific or specialised lawyers within that department. Alternatively, should outside counsel be used on either a general or case by case basis.

The workout department as structured at this moment consists of five staff members. The director, secretary and one new hire will remain but of the two others, one is being transferred to another department, whilst the other will soon commence a training course within the Bank. It is clear therefore, that there will need to be a substantial number of new hires or internal appointments, within the course of the next few months and in any event prior to year end. Close consideration must be given as to the educational qualifications and professional requirements sought from those, who will fill these critical and visible positions.

Job descriptions will be prepared and functional reporting lines thought through and established and the issue of training considered, both for those members situate in Head Office and if officers are to be situated in the branches, then for those throughout the network who may need this assistance. Additionally, decisions will be required as to whether the training should be of a specialised workout nature or a more general credit analysis course.

The matter of job descriptions and functional reporting, will be handled in close consultation and liaison with the project team headed by Mr Rejzek, which involves the human resources specialist seconded to the Bank from the UK based KnowHow Fund.

Approval authorities and discretionary limits for all those involved with problem loans, will require close consideration. Particularly, as to whether Branch Managers are to be permitted any discretion in respect of classified relationships or whether all decisions are to be taken from the centre? Will the director in charge of workouts be granted discretionary approval authorities and if so at what level within the Bank's hierarchy? The issue of authority for the granting of excesses over limits and approving restructuring and new facilities on classified accounts requires careful consideration. Input and advice will be provided.

Policies for managing the workout process will be required. Assistance will be provided with the development of policies and procedures, to include monitoring systems, loan and collateral review procedures, covenants, design of forms and any other areas in which the Bank identifies a requirement within the context of the Terms of Reference.

The Czech National Bank system of classification and provisioning requirements has been implemented. It is understood that a tougher classification system is presently under consideration by the Bank although as yet a final decision has not been taken.

Allied to the issue of classification is that of authority to make provisions and authorise the write-off of irrecoverable debts. In the same context is the issue as to when interest should stop accruing. Any interest which is accrued, must under Czech (and Slovak?) law, be taken to profit but may not be debited to suspense. This artificially inflates the Bank's profits with these "profits" being taxable. Consideration should be given to the freezing of interest in cases where facilities are classified doubtful or loss.

The Bank uses a computer analysis system known as HARMON. From information presently to hand it appears that the system is only of limited use in producing ratio and cash flow analysis. Some ratios produced by this system are wholly meaningless and the trend and common size reports are deficient. More importantly, HARMON is unable to produce any form of projection or "what if" analysis. There is a requirement to review further the HARMON system, understand its abilities and ascertain whether the system as it stands is sufficient for the type of analysis which will be required.

Specific considerations towards which particular attention will be targeted are:

- . An understanding of the basis of valuation of the Bank's collateral. Does land valuation assume existing use, zoning requirements, change of use, blight, income production, comparable sales, replacement cost etc?
- . The bases on which a company can be valued (going/gone concern basis) and discussion of breakup values.

- . Consideration of the core lending decision making process. Can it be improved?
- . When the bank decides to save a company, what methods and measures can be used? Should the bank use its own staff in the restructuring process or bring in outside experts and advisers as required?
- . The validity and viability of debt to equity swaps in the current environment?

Assist with the establishment of controls and procedures to identify promptly problem loans, leading to the development of an early warning system for identification of under performing credits. Establish procedures and systems so that these can be dealt with in a timely manner.

4 Deliverables

The contract with USAID calls for the following deliverables:

- i) Policy recommendation for the Problem Loan Department.
- ii) Policy recommendation for the early detection of problem loans.
- iii) Copies of recommended forms - Action Plans, Approval Memos, Status Reports, etc.

It is intended to provide these in the format of a single comprehensive guide which will eventually form a section of the Bank's Credit Manual.

Advice on the structure of credit/loan workout files, will be provided to the Bank at this stage.

5 Phase Two

The information requested by way of the questionnaire designed in conjunction with the Bank at the beginning of phase one, should by now be at least partially available. The input will be reviewed and entered onto a database in order to permit a detailed analysis of the Bank's problem loan and classified portfolio.

It is important that this exercise is performed diligently as the information from the branches will lay the foundation for decisions as to:

- . Whether the exposure will be managed by:
 - a) The ongoing business unit in the branch;
 - b) The workout unit in the branch (if this is set up), or
 - c) Head Office Workout Department.
- . Where discretion for excesses will be allocated.
- . Whether the current classifications have been awarded correctly or whether adjustment is required in the light of recent information and/or developments.
- . If the Bank's provisioning policy should be adjusted in the light of information provided.
- . If the loan grading system needs changing.

The detailed information now available should enable the Bank to identify under performing exposures and to develop an action plan for each classified or problem exposure with a view to establishing an overall plan for portfolio resolution.

With the earlier portions of this module underway it will be possible to commence a more hands on role in order to strengthen the department by way of direct involvement with restructuring loans and if required, addressing third world bank credits.

6 Phase Three

The final phase of this contract is a fully hands on role assisting in the day to day work of the department, helping with and advising on the analysing and working out of problem credits.

In the current environment it is probable that this form of on the job training will have a more beneficial effect, than any number of theoretical workout seminars. However, if the Bank deems seminars to be appropriate, assistance will be given in their preparation.

Advice will be provided as to the range of outside training available so that the Bank may follow up with this should it so wish.

At the end of this final phase, the Bank should have a fully operational workout department, possess appropriate policies and procedures, have made a good start on specific recoveries and be on the way to the development of a plan for overall portfolio resolution. However, it should be recognised that there is no substitute for experience, although the necessary building blocks will be in place.

7 Additional Considerations

The following issues require consideration, but do not fall clearly into any one of the planned phases. However, these need to be resolved, either as part of the current project or future projects.

- 1) Input with regard to some of the frauds currently extant.
- 2) In order for the bad debt and workout function to be fully effective, consideration must be given to a range of areas which should be considered in this context. Is a Loan Review Function being set up and if so where is it to be located. For the sake of clarity a Loan Review function is separate from and distinct from Audit, although there may be an overlap of responsibilities. In essence a Loan Review Function provides an independent evaluation of the loan portfolio and other extensions of credit and assists in maintaining future credit quality through an ongoing evaluation of the credit process, monitoring of corrective action and ensuring that all approvals are in conformity with the credit policy of the Bank. The main responsibility is to monitor the thoroughness and propriety of credit procedures together with the quality of credit decisions.
- 3) Consideration must be given to the independence of the views of Bank officers who sit on the Supervisory Boards of FTO's. There is a potential conflict of interest where such an officer is also responsible for both the financial and business analysis of the customer and recommends the transaction to the approval process.
- 4) The Bank clearly has a very close relationship with the State which should continue and be leveraged to maximum effect wherever possible. However, the Bank is not an instrument of social welfare and to be effective the workout function and the Board of the Bank must be prepared to take highly visible and on occasion unpopular actions, which may in the absence of State funds or other assistance, result in increasing levels of unemployment in the Czech Republic and Slovakia.
- 5) There appears to be a degree of concern that some "good" clients of the Bank are moving their banking relationships to other competitor banks of CSOB. How should the bank behave towards such clients? Some competitors are more flexible both in their information requirements and in the speed of their response, interest rates, fees, collateral requirements, etc.

8 Meetings Requested

In order to progress the project it would be helpful if the following meetings could be scheduled:

Within CSOB

Mr Kavanac

Mr Stanura

Credit Department

Mr Knapp

Branch Credit

Mrs Richterova

Interstate Agreements

Mr David

Credit Policy Department

Mr Navratil

Bad Debt Department

Mr Petersky

Mr Vojacek

Mr Tauber

Project Finance Department

Mr Snopek

Investments Department

Mrs Hadrova

Accounts Department

IBIS

Branches

Prague main branch

Bratislava

Jablonec

Branch with the "best" performing portfolio

Branch with the "worst" performing portfolio

External

Consolidation Bank

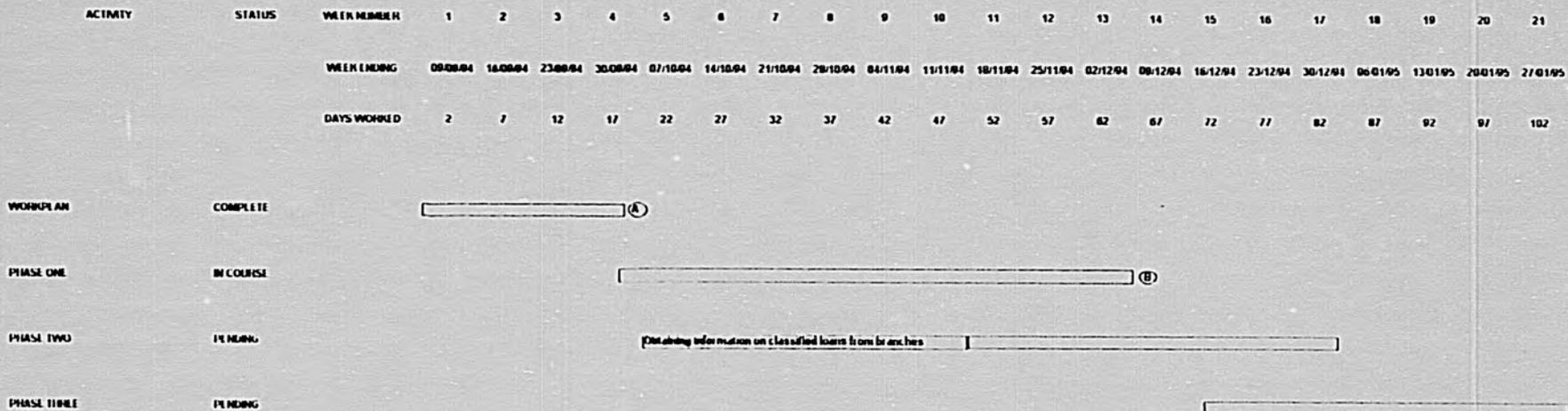
Workout Department

Bankers Association

Banking Training Institute

This is intended only as an initial list. As the project develops a broader scope of meetings will be required in order that the project may be implemented.

9 Workflow Bar Chart



(A) Handover of Workplan

(B) Handover of Deliverables

TABLE OF CONTENTS

FUNCTION C - INTERNAL AUDIT

1. Work Plan for Internal Audit
2. Report on Recommended Format for Audit Procedures
3. Report on Internal Auditing Department Skills & Training Requirements
4. Report on Audit Procedures for Foreign Exchange
5. Internal Control Questionnaire (Summarized Audit Procedures)

RECOMMENDED FORMAT FOR AUDIT PROCEDURES

- Description
- Objective(s)
- Detailed Audit Procedures to be Followed
- List of all IBIS Accounts which will be Checked & Verified
- Sources of Income & Income Verification
- Bank Policy, Directives & Procedures
- Czech & Slovak Laws & Regulations
- Systems (Technology)
- Staffing & Human Resources
- Management & Regulatory Reporting Requirements

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**INTERNAL AUDITING DEPARTMENT
SKILLS & TRAINING REQUIREMENTS**

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**SKILLS & TRAINING PROFILE
INTERNAL AUDITING DIVISION**

◆ **JOB FUNCTION:** _____

◆ **PRESENT INCUMBENT:** _____

◆ **RATING SYSTEM:** [Goal = G (Good) = 3 Points]

G = Good = 3 Points

S = Satisfactory = 2 Points

P = Poor = 1 Point (Urgent Training Needed)

Date Prepared: _____

Prepared By: _____ Reviewed By: _____

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**SKILLS PROFILE SUMMARY
INTERNAL AUDITING DIVISION**

◆ TOTAL NUMBER OF POINTS REQUIRED
TO FULFIL PRESENT JOB FUNCTION: _____

◆ SKILLS AVAILABLE: (Points) _____

◆ SKILLS AVAILABLE: (%) _____

◆ ◆ SKILLS SHORTFALL: (Points) _____ (%) _____

Date Prepared: _____

Prepared By: _____ Reviewed By: _____

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SKILLS REQUIREMENTS						
➤ AUDITING:	REQUIRED YES/NO	AVAILABLE YES/NO	RATING	POINTS	TRAINING NEEDS	HOW CORRECTED
- Principles of Auditing						
- Conducting an Audit						
- Assessment of Systems of Internal Controls						
- Flow Charting						
- Audit Programmes						
- Risk Analysis						
- Trend Analysis						
- Financial Auditing						
- Operational Auditing						
- Audit Sampling Techniques						
- Automated Systems Auditing						
- Audit Planning						
- Workpaper Presentation						
- Circularisation Programmes						
- Audit Interrogation Programmes						
- Controlled Errors						
- Audit Procedures						
➤ ACCOUNTING/BANKING:	REQUIRED YES/NO	AVAILABLE YES/NO	RATING	POINTS	TRAINING NEEDS	HOW CORRECTED
- General Principles of Accounting						
- IAS Accounting Standards						
- Czech Accounting Requirements						
- Slovak Accounting Requirements						
- Thorough knowledge of Banking Operations						

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Ceskoslovenska Obchodni Banka A.S.

SKILLS REQUIREMENTS						
➤ ACCOUNTING/BANKING (Cont'd):	REQUIRED YES/NO	AVAILABLE YES/NO	RATING	POINTS	TRAINING NEEDS	HOW CORRECTED
- <i>Thorough knowledge of Banking Procedures</i>						
- <i>Above Average knowledge of Banking Products & Services incl:</i>						
- <i>Cashiering</i>						
- <i>Lending</i>						
- <i>Overdrafts</i>						
- <i>Letters of Credit</i>						
- <i>Bills Purchased & Discounted</i>						
- <i>Acceptances</i>						
- <i>Guarantees Issued</i>						
- <i>Securities - Trading</i>						
- <i>Securities - Investments</i>						
- <i>Money Market Activities</i>						
- <i>Foreign Exchange</i>						
- <i>Derivative Instruments esp. FRAs, Currency Options</i>						
- <i>Funding</i>						
- <i>Liquidity</i>						
- <i>Retail Banking</i>						
- <i>Communications & Payments Systems</i>						
- <i>Personnel Dept & Payroll Systems</i>						
- <i>Accrual Accounting</i>						
- <i>Security of Premises</i>						
➤ EDP SYSTEMS:	REQUIRED YES/NO	AVAILABLE YES/NO	RATING	POINTS	TRAINING NEEDS	HOW CORRECTED
- <i>Systems Access Controls</i>						

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Ceskoslovenska Obchodni Banka A.S.

SKILLS REQUIREMENTS						
➤ EDP SYSTEMS (Cont'd):	REQUIRED YES/NO	AVAILABLE YES/NO	RATING	POINTS	TRAINING NEEDS	HOW CORRECTED
- <i>Software Amendments & Changes</i>						
- <i>Disaster Back-up & Recovery</i>						
- <i>Special Passwords, Privileged Functions</i>						
- <i>Data Archiving; Off-Site Storage</i>						
- <i>Inventories</i>						
- <i>Controls Over Emergency Fixes</i>						
➤ MANAGERIAL/PERSONAL SKILLS:	REQUIRED YES/NO	AVAILABLE YES/NO	RATING	POINTS	TRAINING NEEDS	HOW CORRECTED
- <i>Strong Inter-personal Skills</i>						
- <i>Self Starter, Ability to work without close supervision</i>						
- <i>Ability to Manage Staff at various levels</i>						
- <i>Strong Analytical Skills</i>						
- <i>Strong Time Management Skills</i>						
- <i>Good at Planning, Organising and Scheduling Work</i>						
- <i>Good at Communicating Ideas</i>						
➤ OTHER SKILLS (Can be Optional):	REQUIRED YES/NO	AVAILABLE YES/NO	RATING	POINTS	TRAINING NEEDS	HOW CORRECTED
- <i>Word Processing (Word, WordPerfect or Other)</i>						
- <i>LOTUS 123</i>						
- <i>EXCEL</i>						
- <i>WINDOWS</i>						
- <i>PC Skills</i>						
- <i>Foreign Language(s) - e.g. English, Slovak</i>						

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<input type="checkbox"/>	<i>Separation of Duties</i>	FX	4
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FOREIGN EXCHANGE

GENERAL DESCRIPTION

The term *foreign exchange* simply means the exchange of the currency of one country for that of another. Foreign exchange *rates* are the equalising prices that link different national currencies. Changes in these prices can and do affect significantly the value of cash flows in trading transactions, as well as the values of foreign claims, investments and obligations. Millions of exchange transactions take place daily between parties in different countries, including individuals, businesses, banks and governments.

During the past few decades, an important development has been the growth of corporations that do business on a global basis, including foreign branch operations and subsidiaries. This has caused an expansion of the volume of import and export transactions. In addition to the problems of settling foreign trade transactions, investments in foreign domiciled operations have added greater foreign exchange complexities. This is due to the fact that, although foreign subsidiary operations are denominated in local currencies, in the final accounting i.e. at consolidated balance sheet time, both the final position and overall profitability of the company is measured in terms of the currency of the parent company. A subsidiary of an American corporation operating in, for example, the Czech Republic, may have to face the fact that, although it has been generating profits in Czech Crowns, the overall value of the investment could be translated into US \$ losses at year-end.

The foreign exchange market is not an organised market in the same sense as a stock exchange or commodity exchange. In other words, there is no *single*, physical place where purchases and sales are executed. While markets are organised in various ways in the different currency areas of the world, most foreign exchange transactions are simply arranged by two parties, sometimes through an inter-intermediary such as a broker, and executed by telephone or telex. The most important dealers in foreign exchange transactions are large commercial banks which maintain foreign exchange "dealing rooms" in London, New York, Frankfurt, Tokyo, Singapore etc. and which execute foreign exchange transactions on behalf of their customers.

➤ The Spot Transaction:

A company may first become involved in foreign exchange via a simple trade transaction. For example, a Czech manufacturer may discover a Polish source for a component vital to its manufacturing process

The Czech company decides to import the component from Poland because of the competitive advantage over domestic manufacturers. The purchase price is denominated in Polish Zloty and when the goods are shipped, the Czech company must pay the Czech Crown equivalent of the Polish Zloty amount needed at that time.

Foreign exchange risk is associated with the fact that the value of the Czech Crown may depreciate (or appreciate) relative to the Polish Zloty - between the time the transaction is concluded and the time the goods have been delivered and payment must be made

The Czech importer may choose to ignore the risk or may be unaware of its implications. It may simply ask its Bank to buy, in the spot market, the required amount of Zloty needed to make payment to the Polish exporter. This outright - spot - purchase or sale of foreign exchange (purchase by the importer, sale by the bank) is probably the most common of all foreign exchange transactions.

➤ **Forward Foreign Exchange:**

Most major currencies can be bought and sold for delivery at a future date as well as for immediate - spot - delivery. Such transactions are called *forward exchange contracts*. In a forward exchange contract, the delivery date and price are agreed at the time the contract is made. In foreign currencies in which an active market exists, purchases and sales for delivery, 3 months, 6 months and 12 months forward are common. Terms longer than one year or more are usually possible.

➤ **The Swap Transaction:**

An inter-company loan between a parent company and its foreign subsidiary can best illustrate a *swap* transaction. Let us assume the following:

- US \$ interest rates are 3 %
- French Franc interest rates are 8 %
- there are currently 5 French francs to each dollar - or FF. 5 = \$1
- francs are selling at a 2 % discount 12 months forward - or FF 5.10 = \$1

The French subsidiary of Company A needs to borrow 10 million francs for one year. From the above it can be seen that the local market can provide these funds at an annual interest rate of 8 % and the annual interest would cost 800,000 francs. However, the American parent company can borrow the dollar equivalent in the United States at 3 %. At an exchange rate of FF. 5/\$ the parent can borrow \$2 million at 3 %, exchange the \$2 million for 10 million francs in the spot market, and re-lend the francs to the subsidiary.

Let us assume that in order to avoid any exchange risk, the parent company will lock-in on current exchange rates and will simultaneously sell French francs forward for dollars. To repay the loan the parent company will need the equivalent of \$ 2,600,000 in forward francs or FF. 13,260,000 (\$2.6 multiplied by FF 5.10) .

FOREIGN EXCHANGE

COMPLIANCE WITH BANK POLICIES & PROCEDURES

DESCRIPTION

Bank Policies & Procedures will exist which cover several areas of the Bank's operations. These policies & procedures are normally documented in a Policies Manual and copies of the manual should be distributed to all appropriate areas of the Bank including any up-dates.

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FOREIGN EXCHANGE

COMPLIANCE WITH BANK POLICIES & PROCEDURES

OBJECTIVES

1. To ensure that the area, department or function which is being audited is familiar with Bank Policies and Procedures affecting their operations.
2. To ensure that any changes in the policies and procedures are disseminated.
3. To ensure that the policies and procedures are being followed.

FOREIGN EXCHANGE

COMPLIANCE WITH BANK POLICIES & PROCEDURES

AUDIT PROCEDURES

1. Obtain the department's copy of the latest policies and procedures affecting their area.
2. Identify any missing policies or procedures including recent updates.
3. Discuss the policies and procedures with the department head and other personnel as appropriate and make a determination as to whether they are familiar with them.
4. Identify and follow through the procedures for disseminating new and or amended policies and procedures covering the Bank as a whole and make a determination as to whether these are adequate
5. Select a number of transactions for checking that the policies and procedures are being complied with.
6. For example, it is usual for banks to place a limit on the foreign exchange risk it is prepared to undertake in the form of a net open position limit i.e. spot position plus or minus the forward position. In addition banks will place a limit - dealing limit - on the aggregate amount they are prepared to buy or sell to any one counter-party at any one time (customer limit).

Obtain details of the latest approved limits.
7. Make a determination as to which limits will be checked for compliance.
8. Obtain details of the accounting records for, say, a 3 month period.
9. Review the positions held and compare against the approved limits.
10. Identify any over limit situations.
11. Follow through and identify how the over limit situation was corrected.

12. During the examination the following specific items should be considered:

- ◆ Bank Operating Directives
- ◆ Bank Accounting Manual
- ◆ Expenses Control Guidelines
- ◆ Credit Authorities Manual
- ◆ Foreign Exchange Trading Guidelines & Policies
- ◆ Any Other Directives (specify)

FOREIGN EXCHANGE

COMPLIANCE WITH CZECH & SLOVAK LAWS & REGULATIONS

DESCRIPTION

Local Laws and Regulations will exist which cover several areas of the Bank's operations. These laws and regulations are normally documented in a Local Laws & Regulations Manual and copies of the manual should be distributed to all appropriate areas of the bank including any up-dates.

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FOREIGN EXCHANGE

COMPLIANCE WITH CZECH & SLOVAK LAWS & REGULATIONS

OBJECTIVES

1. To ensure that the area, department or function which is being audited is familiar with local laws and regulations affecting their operations.
2. To ensure that any changes in the laws and regulations are disseminated.
3. To ensure that the laws and regulations are being followed.

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FOREIGN EXCHANGE

COMPLIANCE WITH CZECH & SLOVAK LAWS & REGULATIONS

AUDIT PROCEDURES

1. Identify the particular laws and regulations affecting the area, department or function which is being audited.
2. Obtain the department's copy of the latest laws and regulations affecting their area.
3. Identify any missing copies of laws and regulations including recent updates.
4. Discuss the laws and regulations with the department head and other personnel as appropriate and make a determination as to whether they are familiar with them.
5. Identify and follow through the procedures for disseminating new and or amended laws and regulations covering the Bank as a whole and make a determination as to whether these are adequate
6. Select a number of transactions for checking that the laws and regulations are being complied with.
7. Review the transactions in the context of the requirements of the relevant laws and regulations.
8. Identify any non-compliance situations
9. Follow through and identify how the situation was corrected.
10. Identify, review and comment on departmental procedures for ensuring compliance with all appropriate local laws and regulations.
11. During an examination of this area the following Czech & Slovak laws and Regulations must be considered (make a list):

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FOREIGN EXCHANGE

SEPARATION OF DUTIES

DESCRIPTION

Risks in the foreign exchange trading are probably greater than in any other area of banking because of the large amounts of money being exchanged every day between banks and customers all over the world. It is only through the proper reporting of exchange transactions that the risks can be kept under control and minimised.

The effective presentation and presentation of reports on foreign exchange activities should be closely linked with a proper system for collecting, recording and storing information and the ability to retrieve this information quickly.

The accounting entries and records that arise from exchange transactions must serve the needs of the traders, the accounting department, the auditors and senior management.

FOREIGN EXCHANGE

SEPARATION OF DUTIES

OBJECTIVES

1. To ensure that there is adequate separation of duties within and among three principal departments concerned with the recording -keeping and daily checks and balances in the trading operation i.e.
 - the dealing room itself
 - the foreign exchange servicing section (back-office operations)
 - a telex section for handling the pay-away and receipt of funds

FOREIGN EXCHANGE

SEPARATION OF DUTIES

AUDIT PROCEDURES

1. Obtain the charts of organisation of the various departments involved in the foreign exchange operations.
2. Review the reporting lines and verify that there is an adequate separation of duties.

Please note that in some banks, the back-office operations reports to the Chief Trader/Treasurer. This arrangement is not recommended for two basic reasons:

- from the standpoint of control purposes, it is more desirable that each area operates independently of each other
 - the administrative requirements of the back-office operations may present needless interruptions for the Chief Dealer/Treasurer
3. Select a number of transactions for review and verify that the separation of duties is being observed:
 - dealing room personnel are responsible for negotiating the contracts, writing up the deals and maintaining position records, blotters and other records as appropriate
 - dealing room personnel should not be involved in the duties of the servicing section including the receipt and checking of incoming confirmations and the booking of trades
 - dealing room personnel should not be involved in funds transfers
 - the exchange rates used for the daily revaluation of positions should be obtained from a market source independent of the dealers such as Reuters. If the rates are provided by the dealers, then they should be independently checked
 - only dealing room personnel are normally authorised to quote the exchange rates to customers at which the Bank is prepared to deal

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- all pay-away of funds to third parties are independently checked and verified before the funds are paid-away
- brokers notes, where appropriate, are checked and approved independent of the dealers

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FOREIGN EXCHANGE

REVIEW OF INTERNAL CONTROL & PROCEDURES

DESCRIPTION

The Bank has defined the controls and procedures which must be followed to protect the Bank's assets and to provide proper care and custody of customers' deposits and valuables and to promote operational efficiency.

A fundamental principle to be followed is the Separation of Duties concept which stipulates that, to the extent possible, no one individual should control a transaction from inception to completion. Or in other words, the maker and checker routine. This principle is designed as a prudent measure to protect the Bank against loss through carelessness, negligence or fraud.

FOREIGN EXCHANGE

REVIEW OF INTERNAL CONTROL & PROCEDURES

OBJECTIVES

1. To ensure that adequate separation of duties exists and that operating controls and procedures are adequate.

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FOREIGN EXCHANGE

REVIEW OF INTERNAL CONTROL & PROCEDURES

AUDIT PROCEDURES

1. Obtain flow charts, if available, and review with departmental personnel to ensure that they are current and up-to-date.
2. If flow charts are not available, prepare same with reference to actual procedures which are operative.
3. Ensure that the flow chart covers all transaction types and all aspects of the areas activities.
4. Review and identify any missing controls or control weaknesses.

If appropriate, prepare a model flow chart and compare this with the actual work flows.
5. Select a number of actual transactions and follow these through the system to verify that the system in operation agrees with what was discussed and documented. Highlight any weaknesses either in the or non-compliance with the procedures.
6. Identify any periodic proofs of prime departmental records to the accounting records and ensure that these are carried out independently and accurately.
7. Carry out an operational overview of the area as follows:
 - i) **Income:**
 - identify all sources of income such as commissions, fees, interest etc. and ensure that these are being collected and credited to the appropriate accounts.
 - review the Statement of Income & Expenses for a selected period and identify any missing income balances by reference to i) above.
 - carry out an overall analysis of the income booked and make a determination as to whether the amount booked is consistent with asset balances, volumes, turnover etc.
 - Identify and review any debits to the income accounts and ensure that these have been approved at i.e. correct level

ii) *Management/Regulatory Reports:*

- o identify and list all reports produced for management and/or the Czech & Slovak Regulatory Authorities
- o review and comment on each report. Consider such matters as:
 - timely production of reports
 - procedural controls and checks to ensure the quality of the reports i.e. accuracy, correctness of data
 - report format and adequacy
 - where applicable, do the reports agree to the accounting records
 - adequate distribution i.e. distributed to the appropriate individuals or managers
- o are there any missing reports i.e. are there reports which are not prepared but which should be
- o are there too many reports

iii) *Systems (Technology):*

- o is the system in use automated or manual
- o if automated, is it adequate and are there any weaknesses. Consider such matters as:
 - system capacity and utilisation (over/under)
 - system flexibility
 - operating costs
 - processing costs
 - system and data security issues
 - error rates

iv) *Staffing (Human Resources):*

- o is the overall organisational structure adequate
- o is the departmental organisational structure adequate
- o is the departmental management structure adequate
- o are all staff fully trained and equipped to perform their duties efficiently

8. Make a determination as to whether efficiencies and productivity can be improved
9. Are all personnel fully occupied ?
10. Are there any automation possibilities or enhancements that would prove cost-beneficial ?

11. Are any functions being duplicated
12. Compare current departmental volumes with historical data and calculate and compare staff/transactions ratios.

Make comments if appropriate.

FOREIGN EXCHANGE
CREATING, REPORTING & AGREEMENT OF POSITIONS

DESCRIPTION

The two basic functions in a foreign exchange dealing room are that of the trader and the position manager. There may be several people acting in each of these roles, depending on the size of the bank's dealing operations, but the basic functions will remain the same. In some operations, the duties of the position manager might be performed by a junior trader.

Aside from making market judgements, the trader is responsible for recording his trades, monitoring his positions so that authorised limits are not exceeded and reporting his end-of-day positions to senior management. The basic documents with which he works are :

- a daily rate sheet
- pre-numbered trade tickets
- a trading record sheet or trading blotter
- foreign exchange position sheet - spot, forward and net open
- forward gap position sheet

It should be established Bank policy and practice that all deals are written-up as soon as possible after they have been dealt and passed on to the back-office operations for booking to the accounts.

FOREIGN EXCHANGE
CREATING, REPORTING & AGREEMENT OF POSITIONS

OBJECTIVES

1. To ensure that all deals are recorded as soon as they are dealt and passed-on to the back-office operations for booking.
2. To ensure that the dealers report their position to senior management at the end of each business day including any held-over transactions.
3. To ensure that the dealers positions are verified to the accounts independently each day.

FOREIGN EXCHANGE
CREATING, REPORTING & AGREEMENT OF POSITIONS

AUDIT PROCEDURES

1. Obtain the IBIS computer produced report of "Fx deals input today" for a selected period, say three months.
2. By reference to the numerical sequence of deal tickets and input times logged by the computer, verify that deals have been recorded by the dealers at the time they have been dealt and input to the accounts.
3. Obtain the records of market rates from an independent source e.g. Reuters, for a selected period.
4. Compare the market rates at various times during the day with deals which were booked at more or less the same time. Any major discrepancies might indicate that deals were dealt at different times and held up by the dealer for whatever reason.

For example, the dealer might have dealt a deal at say 10.00 A.M. but forgot to record the trade until 3.00 P.M. Thus this deal will appear on the IBIS records as a trade dealt around 3.00 P.M. and, theoretically, the rate will be out of line with the independent market rates for 3.00 P.M.
5. Comment and follow-up on any such situations noted in 4. above.
6. Obtain the dealer's records for the end-of-day positions for a selected period, say three months.
7. Review and verify that it has been signed off by senior management as evidence that they are aware of the Bank's overnight positions.
8. Alternatively, obtain copies of the position reports which have been sent to and signed off by senior management. Compare these with the dealer's records/blotters. Comment and follow-up on any discrepancies.
9. Obtain copies of positions in the accounting records for a selected period.

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10. Compare these with the dealer's records/blotters. Comment and follow-up on any discrepancies.
11. Verify that the daily procedures followed by the back-office operations includes a daily check of deals booked to the dealers records to ensure that all trades are booked.
12. If applicable, obtain full details of all held-over deals and verify that these were included in the positions reported to management.

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FOREIGN EXCHANGE

RECEIPT & CHECKING OF INCOMING COUNTER-PARTY CONFIRMATIONS

DESCRIPTION

The most important control over the foreign exchange activities is the receipt and checking, independent of the traders, of an incoming counter-party confirmation.

The trade ticket written-up by the trader is the primary source input for the entire foreign exchange record-keeping system. It is the dealer's hand-written record of what was transacted. Accuracy is of prime importance.

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FOREIGN EXCHANGE
RECEIPT & CHECKING OF INCOMING COUNTER-PARTY CONFIRMATIONS

OBJECTIVES

1. To ensure that all deals are valid and subsequently controlled and verified by the receipt and checking of a counter-party confirmation of all the deal details.
2. To ensure that the non-receipt of an incoming counter-party confirmation is followed up on a regular basis and any out-of-line situations are reported to senior management.

FOREIGN EXCHANGE

RECEIPT & CHECKING OF INCOMING COUNTER-PARTY CONFIRMATIONS

AUDIT PROCEDURES

1. Obtain the IBIS computer produced report of all outstanding foreign exchange deals.
2. By reference to the records maintained by the back-office department, verify that an incoming counter-party confirmation has been received by the department and checked to ensure that all details are correct. Pay particular attention to ensure that the following details are correct:
 - trade date
 - value date
 - amount dealt
 - purchase or sale
 - the dealt rate
 - the counter-party's payment instructions
 - broker used for the transaction
3. Comment and follow-up on all important discrepancies noted:
 - *a trade date* discrepancy i.e. an instance where the incoming confirmation states an earlier trade date than that recorded by the traders might indicate that the Bank's traders are holding-up trades and might indicate that the positions reported to management are in-correct
 - *a value date* discrepancy might have an effect on the Bank's nostro balance and funding
 - *dealt rate* discrepancy might indicate that the amount of the counter-currency is incorrect and thus, the Bank will deliver the wrong amount and might incur a penalty interest fee
 - *deal type or purchase/sale* discrepancies i.e. instances where the dealers say that the Bank is buying, for example, US \$ but the incoming confirmation states that the counter-party is buying US \$ and the Bank is selling US \$. Such a discrepancy might indicate that the dealer has written the deal the wrong way round and, consequently, the Bank's positions are incorrectly recorded
 - *counter-party payment* instruction discrepancy might indicate that the Bank will pay the counter-currency to the wrong correspondent and might incur a penalty interest fee

- broker used discrepancy i.e. instances where the Banks traders state that a broker was used as an intermediary whereas the incoming confirmation states that the trade was dealt directly on the phone/telex might indicate possible collusion between the trader and the broker to transfer funds out of the bank in the guise of broker's fee expenses
4. Follow-up all and comment on all instances where no incoming counter-party confirmation has been received.
 5. Review and comment on the back-office department's procedures for following-up the non-receipt of an incoming confirmation.
 6. Verify that all instances are referred to senior management where counter-parties consistently refuse to send a written confirmation.

FOREIGN EXCHANGE
TRIAL BALANCE & PROVE

DESCRIPTION

The work of the back-office department begins as soon as they receive/collect copies of the original trade tickets that are prepared by the traders throughout the day. The initial act of the back-office operations is to record the trade by inputting it into the computer. Once the trade is input, the computer will create the foreign exchange contract and generate the necessary records.

The main records are summarised as follows:

- *customer liability* to record the spot or forward contract with the customer and thereby arrive at the aggregate total forward exposure with that customer
- *currency liability* to record the Bank's forward contract liability
- *spot position* by currency
- *forward position* by currency
- *net open position* by currency
- *forward maturity gap* by periods as required by Bank policy e.g. by 1 month, 2 months, 3 months forward etc.

**FOREIGN EXCHANGE
TRIAL BALANCE & PROVE**

OBJECTIVES

1. To ensure that all the various accounting reports are self-balancing e.g. that the sum total of all customer purchases/sales in each currency agree with the net open position in that currency.
2. To ensure that the spot position account is a bona-fide account and that the spot position in each currency agrees with the net difference between the assets and liabilities in these currencies.

**FOREIGN EXCHANGE
TRIAL BALANCE & PROVE**

AUDIT PROCEDURES

1. Obtain copies of the various IBIS computer produced reports for a selected period.
2. On a test check basis, trial balance the various records and summarise.
3. Verify account balances produced in 2. above to the various reports and verify that they are the same. For example, the balance of the spot position in currency A reported in report No.X123 should be the same as the balance of the spot position in the same currency reported in all other accounting reports etc.
4. Obtain the foreign currency balance sheets for each currency for a selected period.
5. Verify that the spot position account is a bona-fide account by checking entries over the account to actual trades and counter-party confirmations.
6. Verify that there is a spot position account in local currency i.e. Czech Crowns.
7. Verify that the difference between currency assets and liabilities agree with the various currency spot position balances recorded in the trading spot position account report. Follow-up and comment on any discrepancies.
7. Verify that, when the Bank's balance sheet is consolidated in local currency i.e. Czech Crowns, that the spot position account in Czech Crowns equals zero.
8. Verify that the aggregate Bank's forward purchase asset commitments in local currency agrees with the customers liabilities for purchases in local currency.
9. Verify that the aggregate Bank's forward sale liability commitments in local currency agrees with the customers liabilities for sales in local currency.

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FOREIGN EXCHANGE

**CHECKING OF ADHERENCE TO SPOT, FORWARD, NET OPEN
& COUNTER-PARTY LIMITS**

DESCRIPTION

Risks in foreign exchange dealing are as controllable as the risks that banks take in their lending portfolio or other activities. The most obvious risk arises from unexpected changes in currency values. These can be sharp and sudden as demonstrated by the devaluation of the pound sterling and Italian Lire in September 1992.

➤ **Unmatched Forward Positions:**

Some of the largest profits and losses occur in a bank's "forward book" and this too is also possible without a net open currency position limit.

➤ **Credit Risks:**

Every foreign exchange contract requires that each party deliver the specified currency at the agreed rate and agreed time. For each party there is a risk that the other will not perform as prescribed and that a cost or loss might be incurred in covering.

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FOREIGN EXCHANGE
CHECKING OF ADHERENCE TO SPOT, FORWARD, NET OPEN
& COUNTER-PARTY LIMITS

OBJECTIVES

1. To ensure that all the all foreign exchange trades are checked, independently of the dealers, for adherence to position and customer counter-party limits.
2. To ensure that all over limit situations are reported to management and adequately approved.

FOREIGN EXCHANGE

CHECKING OF ADHERENCE TO SPOT, FORWARD, NET OPEN & COUNTER-PARTY LIMITS

AUDIT PROCEDURES

1. Obtain copies of the Bank's latest Foreign Exchange Guidelines and Credit Authorities.
2. Verify that the trader's are familiar with the Guidelines and Authorities. Sight the trader's copies as prima-facie evidence.
3. Review the trader's records of position and customer limits and verify that they are up-to-date.
4. Review the procedures in force in the credit/appropriate department for checking adherence to limits etc. and comment on the adequacy.
5. Review the procedures for advising the traders and the back-office of changes in limits and comment as appropriate.
6. Obtain the records of the position and counter-party over limit situations for a selected period and verify that they have been reported to senior management and have been adequately approved.
7. Obtain the accounting records of spot, forward, net open and customer counter-party positions/balances for a selected period, say three months.
8. By reference to the various limit authorities/guidelines verify that all outstanding contracts are within limits. Follow-up and comment on any discrepancies noted.

**FOREIGN EXCHANGE
PERIODIC REVALUATION OF FX POSITIONS**

DESCRIPTION

Banks dealing in foreign exchange will normally develop long or short positions in the course of their business. These positions are created when a bank buys or sells foreign exchange for spot or future delivery and does not have an off-setting contract for the same value date.

The periodic computation of the values (revaluations) of these positions is not only an economic necessity, but it also provides useful information to the dealers and to management seeking to maintain control over a dealing operation.

The main and generally accepted approach to revaluing foreign exchange positions is to calculate the current market value of the different positions at periodic time intervals, normally in one month periods, utilising the liquidation method of revaluation.

FOREIGN EXCHANGE
PERIODIC REVALUATION OF FX POSITIONS

OBJECTIVES

1. To ensure that all the foreign exchange positions are revalued at least monthly and the net results booked to the profit and loss accounts.
2. To ensure that market rates, obtained from a market source independent of the Bank's traders, are used for revaluing the positions.
3. To ensure that senior management are informed of the results of the revaluation of the Fx positions.

FOREIGN EXCHANGE
PERIODIC REVALUATION OF FX POSITIONS

AUDIT PROCEDURES

1. Obtain the latest IBIS produced report of the revaluation of the spot positions for each currency in which the Bank has a spot position, long or short.
2. Review and verify that the positions are correctly recorded and include, if applicable, all hold-over deals.
3. Obtain a hard copy of the closing spot market prices (e.g. from Reuters or the CNB) which were operative on the close of business of the date of the report in 1. above.
4. Verify that the rates used for the revaluation of the spot positions is in line with the market rates. Follow-up and comment on any out-of-line rates.
5. Verify that the profit or loss resulting from the revaluation has been booked to the profit and loss accounts with contra entries to the local currency equivalent of the spot position account in the various currencies.
6. Obtain the latest IBIS produced report of the revaluation of the forward gap positions for each currency in which the Bank has a position, long or short.
7. Review and verify that the positions are correctly recorded and include, if applicable, all hold-over deals.
8. Verify that the positions have been broken out in the time bands required by Bank policy guidelines or local accounting requirements.
9. Obtain a hard copy of the forward bid and offer "pips" for the appropriate time bands for all relevant currencies.
10. Verify that the forward rates have been calculated correctly. Pay particular to currencies which may be at a premium for certain periods but then change to a discount.

FOREIGN EXCHANGE
PERIODIC REVALUATION OF FX POSITIONS

11. Test check a number of calculations for accuracy.
12. Verify that any forward profits arising from the revaluation are booked to the profit and loss accounts with contra entries to an asset account entitled "Unrealised profits on Forward FX" or similar.
13. Conversely, verify that any forward losses arising from the revaluation are booked to the profit and loss accounts with contra entries to a liability account entitled "Reserve for losses on Forward FX" or similar.

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FOREIGN EXCHANGE
REVALUATION OF SPOT FX POSITIONS
as at Close of Business _____

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Currency	Currency Position per Accounting records	Book Value in Local Currency	Current Market Rate	Current Market Value	Profit or Loss (Column 3 less Column 5)

Deloitte & Touche, Czech & Slovak Republics

July 1994

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Ceskoslovenska Obchodni Banka A.S.

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FOREIGN EXCHANGE
REVALUATION OF FORWARD GAP FX POSITIONS
as at Close of Business _____

Currency: _____

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
Maturity Date	Period	Net Currency Position Long or <short>	Book Value in Local Currency	Current Market Rate	Current Market Value	Profit or Loss (Column 4 less Column 6)
31/03/93	1 Month					
30/04/93	2 Months					
31/05/93	3 Months					
30/06/93	4 Months					
31/07/93	5 Months					
31/08/93	6 Months					

Deloitte & Touche, Czech & Slovak Republics July 1994

INTERNAL CONTROL QUESTIONNAIRE
(Summarised Audit Procedures)

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INTERNAL CONTROL QUESTIONNAIRE

□ GENERAL OVERVIEW:

		YES	NO
01	Is there an up-to-date Chart of Organisation for the Bank as a whole and for each Department and or Area or Main Function ?		
02	Does the assignment of duties & responsibilities provide for adequate separation of duties ? e.g marketing or loan officers should not authorise the disbursement of loan proceeds, personnel carrying out Control functions should not have cheque signing authority or pass accounting (book-keeping) entries.		
03	Is each function or position documented in the form of a formal job description and with operating procedures? Are all the principal controls for the specific activity covered in respect of: - operating/processing controls including adequate separation of duties - quality controls - management controls		
04	Are there any formal Bank Policy statements covering the main activities of the Bank ? Consider such items as: - credit policy including approval limits, limits by Customer, Country etc. and guidelines for loans to shareholders, directors etc. - trading guidelines (foreign exchange, bonds, securities) including position limits, maturity gap limits etc. - investment policy - accounting policies - code of ethics and/or conflicts of interest - expenses control guidelines - data & system security guidelines - record retention (archiving) guidelines		
05	Is there a Chart of Accounts and if so, does it provide for all appropriate accounts ? Does it describe the contents of each account and any specific approvals required ?		
06	Are financial statements submitted at regular intervals to management ? Are they submitted to the Board of Directors and/or Audit Committee ?		
07	Are financial statements prepared by employees who are knowledgeable ? Is the degree of detail appropriate to the level of management receiving them ?		

		YES	NO
08	Are financial statements accompanied by analytical comments ? Do they show comparison with prior periods and budgets and forecasts ?		
09	What operating analyses are provided to management ? e.g. loan yields, foreign exchange and funding reports, cost of funds or interest margins, problem or doubtful loan reports, error statistics		
10	Are the reports on operating results and key financial data provided by branches or subsidiary companies on a regular and timely basis ?		
11	Are current copies of bank and/or bank holding company laws and regulations maintained ?		
12	Are consolidated financial statements prepared periodically for management and are they accompanied by analytical comments ? Do they show comparisons with prior periods and budgets and forecasts ?		
13	Where an operating loss has been incurred, is there a reporting and approval requirement that ensures that senior management and the internal auditors are informed of the underlying circumstances ?		
14	Are there procedures to ensure that management is informed of changes in laws and regulations pertaining to the business ?		
15	Are specific areas of bank activity regularly reviewed for compliance with bank regulatory requirements ? e.g. lending limits, consumer loan laws, trust laws and regulations, liquidity ratios, capital ratios, qualified investment securities ?		
16	Is there a loan review department ? Is it independent of management and loan officers ? Is the department able to obtain direct access to senior management and the Board of Directors ?		
17	Are written reports on loan reviews issued to appropriate executives ? Do they require follow-up ? Are they reviewed by the Board of Directors and/or Audit Committee ?		
18	Is the frequency and depth of reviews sufficient to detect significant deterioration in the portfolio ?		
19	Does loan review use a watch list or similar technique to monitor problem loans ?		
20	Are physical assets regularly reconciled with the accounting records as to Cash on Hand, Cash & Due from Banks, Investments, Securities, Fixed Assets etc. ?		
21	Are non-book items held in Safe Custody in the vault reconciled regularly with the control records ?		

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		YES	NO
22	Do related employees, if any, have job assignments that minimise the likelihood of collusion ?		
23	Are employees who handle cash, securities and other valuable assets bonded ?		
24	Is rotation of duties enforced by mandatory uninterrupted vacation ? Are duties of vacationing or absent employees assumed by others ?		
25	Are employees adequately trained and supervised ? Is each department supported by staff with adequate experience ? What employee training programmes are in effect ?		

INTERNAL CONTROL QUESTIONNAIRE

□ FOREIGN EXCHANGE:

		YES	NO
01	Does the Bank have a written policy document similar to a Trading Guideline, outlining its foreign exchange trading and back-office activities and describing controls, responsibilities and accountabilities ?		
02	Are trading and back-office functions separated ?		
03	Are all foreign exchange deals transacted by the dealers recorded on a position sheet immediately after being contracted and in strict dealing sequence ? Are all exchanges originating in other operating departments also recorded on the position sheet ?		
04	Is there a daily agreement, independent of the traders, of the positions recorded in the accounting records to the dealers position records ?		
05	Are positions reported to management daily ? Is there an independent check to ensure that the positions reported to management are accurate ?		
06	Is there a system to ensure that all holdover deals are recorded on the current dealing date and that, if appropriate, previously reported positions are amended and management advised of the amendments ?		
07	Do senior management review position sheets daily in order to identify out of line exchange rates, as well as the pattern of intra-day positions held, counterparties dealt with, deal size and brokers used ?		
08	Are all deals independently verified by reference to an incoming counterparty confirmation ? Are all relevant details i.e. deal date, value date, payment instructions etc. checked for accuracy ?		
09	Is there a system for identifying and promptly following up non-receipt of incoming confirmations ?		
10	Is there a system for checking all outstanding deals daily against approved limits i.e. customer limits, gap/maturity limits, net open position limits etc. ?		
11	Are all over limits referred to senior management for approval ?		
12	Are limits - customer, net open position, gap etc. reviewed at least annually for appropriateness ?		

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		YES	NO
13	Are all outstanding deals re-valued at least monthly and are revaluation rates obtained/checked independently of the traders ?		
14	Are dealers allowed to trade for their own account ? If so, are there any special reporting or approval requirements ?		
15	How does management assess the Bank's exposure to exchange rate movements or interest rate changes ? Are there any foreign exchange or similar reports prepared for and reviewed by management ?		

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INTERNAL CONTROL QUESTIONNAIRE

 MONEY MARKET:

		YES	NO
01	Are the money market trading and back-office functions separated ?		
02	Are all deals independently verified by reference to an incoming counterparty confirmation and are all relevant details on the confirmation checked for accuracy ?		
03	Is there a system for identifying and promptly following up on incoming confirmations ?		
04	Have individual limits been established to control the amounts of deposits placed with other banks ?		
05	Is there a daily system for checking all outstanding deposits placed against approved limits and for reporting all over limits to senior management ?		
06	Are depository limits reviewed at least annually for appropriateness ?		
07	Do the dealers keep records to provide them with the ability to maintain strict control over their nostro account balances, in order to prevent excessive or negative balances ?		
08	Is there a check undertaken independently of the money market traders to ensure that all deals are transacted at market rates ?		
09	Is there a reporting and approval mechanism to inform senior management of the underlying circumstances resulting in the payment of penalty interest ?		
10	Is the Bank exposed by being over dependent on any particular depositor or depositors ?		

INTERNAL CONTROL QUESTIONNAIRE

□ INVESTMENT PORTFOLIO:

		YES	NO
01	Does the Bank have a written policy covering investments both for its own account and for its trading account ? If so, does it cover matters such as investment objectives, limits and the approvals necessary prior to purchase or sale ?		
02	Are all investments periodically reviewed for compliance with investment objectives and limits ?		
03	Is there a policy regarding the need to account differently for items as between investment account and trading account ?		
04	Are trading account investments re-valued as to lower of cost or market at least monthly ?		
05	Are revaluation rates obtained or verified independently of the dealers ?		
06	For own account investments, is any premium or discount taken to profit or loss on an accrual basis over the life of the underlying investment ?		
07	Are certificates or documents of title held in the vault under dual control or, if held to the Bank's account by a correspondent bank or safe custodian, does the Bank request and receive a periodic written confirmation of that and is the signature on the confirmation verified for authenticity ?		
08	On a periodic basis, are the investments held in the vault physically counted and agreed to the vault contents control register and to the accounting records ? Are the confirmations of investments held by correspondents or custodians also periodically agreed to the accounting records ?		
09	Are controls in place to ensure prompt receipt of interest and dividends and are there reporting procedures to bring non-receipt of income to management's attention ?		

INTERNAL CONTROL QUESTIONNAIRE

□ LENDING:

(Including: - Loans, Advances, Overdrafts, Letters of Credit, Lease Receivables, Bills Discounted, Acceptances and Guarantees Issued)

		YES	NO
01	Does the Bank have a written credit policy covering matters such as credit approval requirements and procedures, country credit limits, loan and account documentation procedures and responsibilities and loans to directors and shareholders ?		
02	Is the loan administration function separate from the marketing and credit approval functions ?		
03	Is all lending closely monitored ? Are management information reports available on a regular basis concerning: - portfolio content broken down by borrower - country/industry risk/exposure - potentially un-collectible loans - suspense or non-accrual loans - principal and interest - deficiencies in loan documentation or collateral		
04	Is a documentation check list utilised ? Is it used to monitor the following: - that all mandatory documents are held before funds are disbursed - that lending/new business officers have not exceeded their authority to waive documents - that documentation held has been reviewed and is adequate - that all original documents are held under dual control in a fire proof safe/cabinet - regular receipt and review of annual financial statements - that checks have been made to ensure all loans are to bona-fide customers e.g. company searches, bankers references etc.		
05	Are all extensions of credit independently reviewed for proper approval ?		
06	Do customers confirm in writing, that they have received the proceeds of the loan ?		
07	Is there a system in place to ensure that all interest and principal amounts are collected when due and that amounts not received are promptly identified and reported to management ?		

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		YES	NO
08	Have standard bank documents (guarantees or letter of pledge for example) been approved by legal counsel and is non-standard documentation automatically referred to legal counsel to ensure that the Bank is fully protected ?		
09	Does bank policy require two authorised signatures on a Guarantee or a Letter of Credit before it becomes a valid and binding document ?		
10	Are counter indemnities always taken from customers on whose behalf the Bank has entered into a guarantee commitment ?		

INTERNAL CONTROL QUESTIONNAIRE

□ LOAN REVIEW:

		YES	NO
01	Is there a loan review function which is independent of management and lending officers ? Does the function report directly to senior management and the Board of Directors ?		
02	Are written reports on loan reviews issued to appropriate executives ? Do they require follow-up ? Are they reviewed by the Board of Directors or Audit Committee ?		
03	Is the frequency of reviews sufficient to detect significant changes or deterioration in the portfolio ?		
04	Does loan review use a watch list or similar technique to monitor problem loans ?		

INTERNAL CONTROL QUESTIONNAIRE

□ INCOME & EXPENSES:

		YES	NO
01	Are there controls in place to ensure that all interest income and expenses are accrued correctly ?		
02	Are the accrual calculations independently verified ?		
03	Are the accrual records and all appropriate accounting balances e.g. principal, accrued receivable and accrued payable proved, at least monthly, to the accounting records ?		
04	Are there controls which would identify overdue interest and principal repayments ?		
05	Are there controls which would identify non-receipt of fees, commissions and other non-interest income ?		
06	Are all reserve and prepaid balances reviewed monthly for accuracy and are they proved at year-end to identify any under statement or over statement of profit and loss ?		
07	Does the Bank have a written policy setting out the management approvals required for authorising expenses ? Are the approval requirements structured by type of expense and level of expense ?		
08	Are all expenses independently reviewed for correct approval ?		

INTERNAL CONTROL QUESTIONNAIRE

□ ACCOUNTING & ELECTRONIC DATA PROCESSING SECURITY:

		YES	NO
01	Is there a Chart of Accounts and if so, does it describe the contents and purpose of each account used? Are additions and deletions strictly controlled?		
02	Are all accounting entries (whether created manually or generated through input to an automated system) reviewed and approved by an authorised signatory of the Bank who is independent of the individual(s) originating and/or inputting the entries?		
03	After entries have been posted to the accounts, is there an independent review of all input documents or computer output reports to ensure that only authorised transactions have been booked? For all expense tickets, does this review also check conformity with the expense approval requirement policies?		
04	Does the Bank have a policy requiring that, on a periodic basis, accounting balances are proved to underlying documentation? If yes, are the internal auditors informed of the completion of these periodic proofs?		
05	Is access to the computer system effectively controlled by means of passwords, user codes, mandatory menus limiting the availability of functions etc.?		
06	Is there a directory of system users and their functions? Does the distribution of functions ensure separation of duties between user departments on the one hand and system operators/programmers on the other? Can function availability be changed only by duly authorised access?		
07	Are passwords changed at irregular intervals to help protect their integrity? If the system requires that only one person accesses the password file to effect password changes, is that person a senior manager?		
08	Are special passwords required to access privileged functions?		
09	Does the access to privileged functions automatically provide a written audit trail in the form of a computer log which records the access and details of all input carried out? Is there a review of the log independent of the users of the privileged functions in order to identify any unusual or unauthorised activity?		
10	Are there any of the following controls over terminal activity: - terminals dedicated to specific user codes - automatic time out (cut off of access) when a terminal which is logged on to the system, has not been used for a pre-determined period - reports of attempted unauthorised access		

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		YES	NO
11	Are there controls to ensure that only duly authorised computer programs are resident on the system ? Are independent program comparisons undertaken periodically to ensure that there have been no unauthorised program additions, deletions or amendments ?		
12	Is there an inventory of all programs and has each program on the inventory been properly authorised ?		
13	Are disks and tapes physically secure and held under dual control ?		
14	Are the environmental conditions within the data centre kept within the parameters recommended by the system manufacturers ?		
15	Is the data centre physically secure in terms of restricted access and fire prevention/fighting capability ?		
16	Do contingency/back-up disaster plans exist in case of hardware failure ? Are the plans reviewed periodically and have they been tested ? Do they clearly identify roles and responsibilities ?		
17	Are there arrangements for the off-site storage of software and data on a daily basis, in addition to routine back-up held on-site ?		

INTERNAL CONTROL QUESTIONNAIRE

❑ ELECTRONIC DATA PROCESSING DEVELOPMENTS:

		YES	NO
01	Have all electronic data processing developments been evaluated from a cost/benefit standpoint and approved by senior management ?		
02	Have Automation Policy, Standards and Procedures been established and documented and are there procedures to ensure that all system developments are carried out in accordance with established standards ?		
03	Have documented specifications been prepared, explaining the system from both the user and functional viewpoints ?		
04	Have all EDP developments received the appropriate budget approval and is there a control in place to ensure that each project is adequately approved and regularly re-assessed in the light of budget, time frames established etc.?		
05	If a third party is involved in any aspect of the project, has an enforceable contract been drawn up to protect the Bank's interest ? Has the contract been reviewed by legal counsel ?		
06	Has the system specification been independently reviewed before the commencement of programming to check that all required controls have been incorporated ?		
07	Have program specifications been prepared, independently reviewed and approved in accordance with established standards ?		
08	When programs have been developed, have they been independently reviewed, approved, documented and tested in accordance with established standards ?		
09	Has the new system been run in parallel with the existing system to prove its accuracy ? In particular, has the parallel run included month-end profit days, if applicable ?		
10	Has data been loaded onto the system and checked under dual control ?		
11	Have all staff been trained to use the system, particularly the operating departments and computer operators ? Are run books available for the computer operators to enable them to operate the system in any situation, particularly when faults occur ?		
12	Are there documented recovery procedures to enable the Bank to continue to process transactions, in the event of a system or computer failure ?		

INTERNAL CONTROL QUESTIONNAIRE

☐ CASHIERS FUNCTION:

		YES	NO
01	Do the cashiers work in an area of effective restricted access ?		
02	Is the vault under dual control and are cash, other valuable items, duplicate keys etc. held in the vault overnight ?		
03	Are cashiers required to count and agree their cash holdings (including any cash reserve held in the vault) to the accounting records on a daily basis ? Is there a Bank policy which requires a surprise and independent full cash count on a monthly basis ? When was the last independent cash count taken ?		
04	Have limits been established to control the amount of local/foreign currency held by the cashiers in their tills ? Are till holdings regularly monitored against limits ? When was this last done ?		
05	Are tellers transactions reviewed daily ?		
06	Are tellers overages and shortages documented and reviewed ?		

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INTERNAL CONTROL QUESTIONNAIRE

□ CAPITAL ACCOUNTS:

		YES	NO
01	Are capital and retained earnings accounts regularly reviewed and reconciled to ensure that only authorised entries e.g. monthly profit and loss have been passed over the accounts ?		
02	Are all credits to retained earnings accounts independently verified to the profits recorded on the statement of profit and loss ?		
03	Is there a control in place to ensure that minimum capital requirements/ratios are maintained at all times ?		
04	Is there a corporate seal in use ? Is so, is the seal held in the vault when not in use and is it maintained under dual control when in use ? Is a log of its usage maintained ?		
05	Is there a control in place to ensure that any investment in affiliates and/or subsidiaries is properly approved by senior management, that evidence of the investment is held and that the investment has been properly accounted for ?		

INTERNAL CONTROL QUESTIONNAIRE

☐ FIXED ASSETS:

		YES	NO
01	Is there adequate separation of duties covering the following aspects of the purchase and disposal of fixed assets to ensure that only approved transactions take place: - requisitions for the purchase of fixed assets - approvals for purchases - acknowledgement of receipt of assets (signed delivery notes etc.) - payment of invoices - disposal of assets		
02	Is there a fixed asset inventory and is the inventory periodically checked to the physical assets and agreed to the accounting records ?		
03	Are the depreciation and amortisation records periodically agreed to the accounting records ?		
04	Does the bank have insurance coverage in respect of its fixed assets that provides adequate coverage against all major risks and are all premiums paid up-to-date ?		
05	Are there procedures which call for at least an annual re-appraisal of the adequacy of the insurance coverage ?		

INTERNAL CONTROL QUESTIONNAIRE

□ NOSTRO ACCOUNT RECONCILIATIONS:

		YES	NO
01	Does the person responsible for the reconciliation function maintain a control list showing all accounts to be reconciled, including all nostros, inter-branch and clearing and holdover accounts ? Is the list annotated to show the completion of each reconciliation ?		
02	Are all accounts reconciled at least monthly ?		
03	For the high volume nostro accounts have arrangements been made to receive the correspondents statements on a daily or weekly basis and do the reconciliation staff perform a tick-back of these statements to the ledgers as the statements are received ?		
04	Are account reconciliations completed by staff who are not involved in passing entries over the accounts and are they independently reviewed ?		
05	Do the reconciliations of each account provide full information concerning the date and nature of the open items and the status of the follow-up action taken to resolve them ?		
06	Are the responsibilities for resolving and following up open items clearly documented ? Are there any material long-outstanding items on the latest account reconciliations ?		
07	Are all outstanding items supported by documentation proving the authenticity of the underlying item ?		

INTERNAL CONTROL QUESTIONNAIRE

☐ HOUSE ACCOUNTS:

(Including all sundries receivable, payable and other in-house accounts)

		YES	NO
01	Are all accounts reconciled at least monthly ? Do the reconciliations provide full information concerning the date of the original entry, the description of the item and the status of the follow-up action taken to resolve the matter ?		
02	Are the reconciliations completed by staff who are not involved in passing entries over the accounts ?		
03	Are the reconciliations reviewed by management after they have been completed ?		
04	Are the responsibilities for resolving and following up open items clearly documented ? Are there any material long-outstanding items on the latest account reconciliations ?		
05	Are all outstanding items supported by documentation proving the authenticity of the underlying item ?		

INTERNAL CONTROL QUESTIONNAIRE

☐ PERSONNEL FUNCTION:

		YES	NO
01	Are there formal recruitment procedures for engaging staff? Do these procedures include: - signed employee application form and employment contract - obtaining satisfactory references prior to the commencement of employment - medical examination prior to the commencement of employment		
02	Does the Bank have a written Code of Ethics or Conflicts of Interest Policy? If yes, are all employees given a copy of the document on joining and are they reminded of the contents periodically thereafter?		
03	Are all staff provided with at least an annual performance appraisal?		
04	Does the Chairman or his delegate authorise all changes in salary and staff benefits?		
05	Does the Bank have a policy calling for the periodic rotation of staff duties?		
06	Is rotation of duties enforced by a policy of mandatory uninterrupted vacations e.g. a minimum of 2 weeks away from the job? Are the duties of vacationing or absent employees temporarily assumed by other staff?		
07	Do related employees, if any, have job assignments that minimise the likelihood of collusion?		
08	Are employees who handle cash, securities and other valuable assets bonded?		
09	Are the monthly payroll calculations checked independently of the person preparing them and are payments authorised by the Chairman or his designate?		
10	Are attendance records maintained?		
11	Are all overtime claims independently verified and approved?		
12	Do staff maintain checking or deposit accounts with the Bank? If yes, are the transactions passing over the accounts periodically reviewed by management?		

INTERNAL CONTROL QUESTIONNAIRE

 SECURITY OF PREMISES:

		YES	NO
01	Are the arrangements for protecting the physical security of the Bank's premises, personnel and assets adequate ? If necessary, has professional advice been taken on security matters ?		
02	Is access to the Bank controlled ?		
03	Is fire-fighting equipment adequate and is it regularly inspected by representatives of either the supplier or the fire fighting services ? Have fire officers who would be responsible for ensuring that all staff were safely evacuated in the event of a fire, been appointed ?		
04	Are fire evacuation drills carried out regularly ?		
05	Are offices fitted with fire alarm systems and are the systems tested periodically ?		
06	Are key and lock combinations for vaults, safes and other secure areas strictly controlled ? Are combinations changed periodically ?		
07	Are items held in safe custody reconciled regularly with control records ?		
08	Are there any procedures for protecting and re-constructing prime accounting or other records in case of a disaster ? Are records micro-filmed and stored off-site ?		

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