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Project Management
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Construction Finance

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(Edited by Kyle Frazier)
- Capital
  - Generation
  - Distribution
  - Recovery

- Current Approach
  - Available budget drives policy
  - This “supply constrained system” has created
    - Large Work Backlog
    - No Evaluation Benefits
    - Budgets that do not respond to need
Current Financing Mechanisms for Construction Projects

- General Tax Revenues, Property Assessments
- Dedicated Tax Revenues (Trust Funds, Enterprise Accounts)
- Equity Investment
- Debt Financing (Bonds, Notes, Other I.O.U.’s)
- Tolls, Usage Fees
Traditional Sources of Project Finance in Developing Countries

1. Development Assistance (AID)
   - Multilateral
     - OECD
     - OPEC
     - EU, NAFTA, Mercusor
   - Bilateral

2. Development Banks
   - World Bank
   - European Investment Bank
   - Asian Development Bank
   - Etc.

3. Direct Foreign Investment
   - MNC’s

4. International Capital Markets
   - Commercial Banks
   - Syndications
Current Trends

- Turnkey Projects
  - Design-Construction
  - Project Finance Integration

- Export Credits
  - Materials and Equipment
  - Feasibility Studies
  - Project Finance

- Consumer Credits
  - User Finance

- Counter Trade (Barter)
  - Counter purchase (Buy Local Products)
  - Compensation Agreement (Cash and Goods)
  - Buy-Back Transaction (Buy Project Products)

- Equity Position
  - Build and Operate
  - Joint Ventures
  - Economic Risks
New Financing Mechanisms and Ideas

- Sale/Leaseback Arrangements
- Linkage Payments, Development or impact fees
- New types of trust funds for public construction (E.G., Public Assets Preservation Trust Fund)
- Infrastructure banks or revolving fund accounts
- Innovative Packaging of financing with design/construction services (e.g. B.O.T.)
- Broadening of scope for activities by public works authorities (e.g. involvement of transit agencies in real estate development; commercial development of air rights)
- Re-assertion of the private sector role in infrastructure construction and operation
International Capital Markets

- Risks for international lending institutions
  - World debt/creditworthiness
  - Country/Political Risks
  - Riskiness of Construction business
  - Developer if default (equity element)
- Co-Financing
  - With development banks
  - Commercial banks: short maturities
  - Development banks: long maturities
  - Lower Risks?
- Syndications
  - Risk Distribution
Areas of Comparative Advantages in International Competition

- **Finance**
  - Export Credits and Insurance
    - Financing facilities
      - USA: Eximbank, USAID
  - Insurance Facilities
    - USA: Foreign Credit
    - Insurance Association
    - Private Export Funding Corporation
    - Overseas Private Investment Corporation

- **Comparison of Country Systems**
  - Terms of credit extended
  - Volume of activities covered

- **Variety of instruments available**
  - Government policies/constraints
  - Mix of services
  - International Agreements
Areas of Comparative Advantages in International Competition (2)

- Taxation
  - Domestic neutrality
  - Foreign neutrality
  - Mixed policies
  - Corporate income
  - Personal income
  - Accounting methods
  - Tax treaties

- Private Industries’ Stats/Support
  - Banking industry
  - Engineering/management capabilities
  - Building materials industries
  - Labor
  - Integration/turnkey

- Other
  - State-owned companies
    - Complete government control
    - Indirect Government involvement
    - Advantages (credit, taxes, financial constraints, information
  - Consortia
  - Promotion Programs
  - Laws, Regulations, Government Requirements
    - Environmental impact analysis
    - Anti-boycott
    - Corrupt practices
    - Political constraints
New Organizational and Institutional Approaches

- New organizational structures adapted to managing, operating, and preserving existing infrastructure
- Legal, regulatory initiatives addressing
  - Problems of liability associated with innovation
  - New approaches to financing and pricing
  - New organizational structures, relationships, and involvement in infrastructure.
- New codes and standards to reflect
  - New construction technology
  - Long-term performance, maintenance, and rehabilitation
  - Evolving patterns of usage
- Greater attention to environmental concerns, safety, protection of workers and public
Pricing Philosophy in Public Sector

- When infrastructure supported by broadly based taxes
  - Treat very large number of constituents as “investors”
  - Not all constituents are users of facility
  - Financing is “pay as you go”

- As a result
  - Taxpayers do not perceive immediately the benefits of their taxes
  - Tax funds may be diverted to other purposes
  - No direct correlation between tax and benefit
  - Once facilities are completed, they are priced essentially as a free good (no capital recovery provision)

- Thus pricing fails to act as a controlling mechanism with respect to either capacity or demand in public facilities (e.g., highways, transit, water)
Pricing Philosophy in Private Sector

- Predicted upon balancing adequate rate of return with attraction and satisfaction of sufficient demand
- Market mechanisms regulate not only price but also available capacity and adequacy of services
- Users select desired services and quantities from set of already available options, with demonstrated track records and known prices.
- Users’ willingness to pay supported by readily perceived benefits, quality and reliability of service
- Examples: housing; airlines; freight carriers, utilities (telephone, electricity); toll roads
Initial provision of services by entrepreneurs

Consolidation of firms

Regulation of fee and franchises

Decline in profitability

Withdrawal of capital and services

Public takeover

Public subsidies

Declining efficiency

Dilemma of subsidy cuts, fee increases, and services

Privatization
Financing Aspect of Construction

- Owner Financing
  - Financing Public Projects
  - Financing of Private Projects

- Contractor Financing
  - Financial Implications of Bidding and Contract Methods
    - Lump Sum or Fixed Price Contract
    - Unit Price Contract
    - Cost Plus Fee Contract
    - Target Price Plus Profit Contract
    - Guaranteed Maximum Price Contract
Financing Aspect of Construction (2)

- Typical Cash Flows of a Construction Project
  - Pre-Bid Expenses
  - Bonds
    - Types of Bonds
    - Cost of Bonds
    - Benefits of Bonds
    - Bond Underwriting
- Mobilization Expenses and Advance Payments
- Progress Payments and Expenditures
- Final Account and Retention Payments

- Corporate Financing Requirements
  - Working Capital
  - Plant and Equipment
Financing Aspect of Construction (3)

- Role of Commercial Banks
  - General Arrangements
  - Establishing Banking Relations

- Specifically Banks require:
  - General information about the financial and other background of the company,
  - Specific ratios and figures illustrative the company’s financial position, and
  - Specific information about the purpose of the under-extension financial services.
## Financial Figures and Ratios of Interest to Commercial Banks

<table>
<thead>
<tr>
<th>Basic Figures or Ratios</th>
<th>Explanation</th>
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</thead>
<tbody>
<tr>
<td>Current ratio</td>
<td>Current assets/current liabilities</td>
</tr>
<tr>
<td>Acid test ratio</td>
<td>(Cash + accounts receivable)/current liabilities</td>
</tr>
<tr>
<td>Working capital</td>
<td>Current assets – current liabilities</td>
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<tr>
<td>Working capital turnover</td>
<td>Net sales/working capital</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other ratios &amp; relationships</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Net profits/net sales</td>
<td>Total liabilities/net worth</td>
</tr>
<tr>
<td>Net profit/working capital</td>
<td>Accounts receivable/billings x 35 days</td>
</tr>
<tr>
<td>Debt to equity ratio</td>
<td></td>
</tr>
<tr>
<td>Average age of accounts receivable</td>
<td></td>
</tr>
<tr>
<td>Cash conversion period</td>
<td>Average age of accounts receivable + average age of inventory</td>
</tr>
<tr>
<td>Cash demand period</td>
<td>Cash conversion period – average age of accounts payable</td>
</tr>
</tbody>
</table>

Financial and Management Issues of Interest to Commercial Banks

- Financial Issues
- Growth record
- Trends in profits
- Credit rating
- Fixed payments
- Bonding capacity
- Other bank references
- Purpose of credit
- Source of repayment
- Timing of repayment
- Cash flow projections
- Business exposure
- Political exposure

Management Issues
- Management structure
- Management capabilities
- Management information systems
- Management practices
- Equipment policies
- Types of projects
- Countries working
- Outlook of operations
- Reputation among clients
- Reputation among subcontractors

World Bank Project Cycle

- Identification
- Preparation
- Appraisal
- Negotiations
- Implementation & Supervision
- Evaluation
IBRD Loan to Project Company with Country Guarantee

IBRD

Loan

Loan Repayment

Country

Guarantee of Loan Repayment

Project Company

Project Revenues

Output

Purchaser

Share Holders

Equity Investment
IBRD Loan to Country with On-lending to Project Company

IBRD

Country

Project Company

Purchaser

Project Agreement

Loan

Sub-Loan

Sub-Loan Repayment

Project Revenues

Output

Equity Investment

Share Holders

Loan Repayment
IBRD Loan for “Enclave” Project

- IBRD
- Country
- Off-Shore Trust Account
- Project Company
- Purchaser
- Share Holders

- Guarantee of Loan Repayment
- Loan Repayment
- Loan (and Security) Agreement
- Return to Project Company
- Project Revenues
- Output
- Equity Investment
World Bank Financial Debt Refinancing

- **World Bank**
- **Country**
- **Commercial Lenders**
- **Project Company**
- **Purchaser**
- **Share Holders**

**Key Points**
- Loan
- Loan Repayment
- Commercial Loan
- Commercial Loan Repayment
- Project Revenues
- Output
- Equity Investment

**Diagram Descriptions**
- Project Agreement
- Commercial Lenders receive Commercial Loan and make Commercial Loan Repayment.
- Project Company receives Project Revenues and Output.
- Share Holders are involved in Equity Investment.
World Bank Financial Investment Facility

World Bank

Project Company A

Country

Investment Facility (Development Finance Company)

Loan/Investments

Repayments/Returns

Project Company B

Loan

Loan Repayment

Loan Proceeds

Loan Repayment

Project Agreement
World Bank-Financed Equity
World Bank-Financed “Take-or-Pay” and Other Contracts

- **World Bank**
  - Loan
  - Loan Repayment
- **Country**
  - Loan Proceeds
- **Government Purchaser**
  - Payment under “Take-or-Pay”/“Take-and-Pay” Contract
- **Project Company**
  - Output
  - Equity Investment
- **Shareholders**
  - Equity Investment

Project Agreement
World Bank-Financed Put Option

- World Bank
- Contingent Loan Repayment
- Contingent Loan
- Country
- Loan Proceeds
- Repayment
- Government Agency
- Put Option
- Project Financier
- Financing
- Repayment/Returns
- Project Revenues
- Project Company
- Purchaser
- Output
World Bank-Financed Third-Party Guarantee

- World Bank
  - Project Agreement
  - Contingent Loan Repayment
  - Contingent Loan

- Country
  - Funding Agreement
  - Loan Proceeds

- Third-Party Guarantor
  - Guarantee

- Project Financier
  - Financing
  - Repayment/Returns
  - Project Revenues

- Project Company
  - Output

- Purchaser
IBRD “Partial Credit” Guarantee Through a Put Option

IBRD

Country

Commercial Lenders

Project Company

Purchaser

Share Holders

Loan

Put Options

Loan

Loan Repayment

Project Revenues

Output

Equity Investment

Indemnity
IBRD “Partial Credit” Guarantee

IBRD

→ Loan

Guarantee

Commercial Lenders

Loan

→ Loan Repayment

Loan Repayment

Project Company

→ Equity Investment

Share Holders

Country

→ Indemnity

(or Counter-Guarantee)

Project Revenues

Output

Purchaser

Equity Investment
IBRD “Partial Risk” Guarantee

IBRD

Country

Commercial Lenders

Project Company

Purchaser

Loan

Guarantee

Indemnity (or Counter-Guarantee)

Undertakings to Project Company for Commercial Lenders

Loan Repayment

Project Revenues

Output

Equity Investment

Share Holders

Loan

Indemnity

Undertakings to Project Company for Commercial Lenders
IDA Credit

- **IBRD**
  - Credit Repayment to **Country**
  - Credit
  - Project Agreement

- **Country**
  - Sub-Loan to **Project Company**
  - Sub-Loan Repayment
  - Project Revenues

- **Project Company**
  - Output
  - Equity Investment

- **Purchaser**
  - Project Revenues
  - Output

- **Share Holders**
  - Equity Investment