Finance II

M&A scenarios

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Agenda

1. Practicalities

2. Banking basics

3. M&A basics

4. Suggestions for the analysis

1. PRACTICALITIES

Assignment 1 (M&A cases)

Teams:

No.	Surname	Nome	University	Assignment 1 - M&A	Contact
1012846	**Tran**	**Francesca**	**Unibg Building Engineering**		tran.francesca@gmail.com
1034972	Rondi	Giulia	Unibg Management Engineering		
1055421	Zeynep	Rakici	Bahcesehir University Computer Engineering		
1030213	Conticello	Luca	Unibg Building Engineering		
	Nembrini	Nicola	Unibg Building Engineering		
1029758	Giannone	Nicolò	Unibg Management Engineering		
1055420	Bingol	Duran Mert	Hacettepe University Electrical and Electronic Engineering		
1055394	Mehmet	Arif Cimen	Karadeniz Teknik University Civil Engineering		

Assignment 1 (M&A cases)

- Analyise a hypothetical M&A process between UBI and BPER

- RQ: Which is the value created by this M&A deal?

- TO DO: give an estimation of the M&A synergies

Aims (Assignment 1)

1. Team working
2. Quant skills
3. Perform a business valuation, forecast future performance
4. Collect real-world business and financial data
5. Structure and share spreadsheets

Assignment 1: Calendar

Banking system
Monday 01/10, 10.30-12.30

Consultant
Monday 12/11, 10.30-12.30, 14.00-16.00
Enrico Tanduo, Boston Consulting Group

M&A synergies
Monday 12/11, 10.30-12.30, 14.00-16.00
Enrico Tanduo, Boston Consulting Group
Edoardo Palmisani, Boston Consulting Group

Case study
Wednesday 14/11, 14.00-16.00 (case study)
Tuesday 20/11, 17.30-19.30 (available for feedback –single groups)
Monday 26/11, 9.00-13.00 (available for feedback –single groups)
Tuesday 27/11, 16:30-18:30 (available for feedback –single groups)

Student presentation
Monday 3/12, 10.30-12.30 and 14:00-16:00
Gaia Bassani, Enrico Tanduo, Edoardo Palmisani and Silvio Vismara

Grading

Assignment 1 (M&A synergies)	**10**
Group-level	10
Assignment 2 (in-class presentation)	**10**
Group-level	10
Test (valuation, theory, seminars)	**12**
Individual-level	12
Autonomy, participation, diversity	**4**
Individual-level	4
Total grade	**36**
Group-level	20
Individual-level	16

2. BANKING BASICS

Banking scenario

- Uncertainty surrounds the valuation of banks

- Wide variety of business activities (lending and borrowing, underwriting and placement of securities, payment services, asset management, proprietary trading, and brokerage).

- Grouping activities according to the types of income they generate for a bank:
  - Net interest income
  - Fee and commission income
  - Trading income
  - Other income

Outcomes

- **Net interest income** is the difference between the interest income a bank earns from lending and the interest expense it pays to borrow funds.
- **Fee and commission income** is a fee for services (e.g. transaction advisory, underwriting and placement of securities, managing investment assets, securities brokerage).
- **Trading income** is the profit due to a wide variety of instruments traded on exchanges and over the counter (e.g. equity stocks, bonds, foreign exchange, credit default swaps).
- **Other income** from a range of nonbanking activities, including real estate development, minority investments in industrial companies, and distribution of investment, insurance, and pension products and services for third parties.

Banking Income Statement

Income Statement	**2018**	**2017**
+ Interest Income (on Loans, Trading, Other)		
- Interest Expense (on Deposits, Other Borrowings)		
= Net Interest Income (Margine di interesse)		
+ Fee and Commission Income		
- Fee and Commission Expense		
= Net Fee and Commission Income		
+ Trading Income		
+ Other Income items		
= Operating Income (MINTER)		
- Staff costs		
- Other Administrative Expenses		
- Net Impairment losses on property, equipment and investment property and intangible assets		
-/+ Other net operating income/expense		
= Operating Expenses		
Net Income Before Taxes		
- Taxes		
Net Income		

Activities/Liabilities/Equity

- **Deposits (Gathering/Raccolta)** consist of money placed into banking institutions for safekeeping. The deposit itself is a liability owed by the bank to the depositor.

  → [Interest Expense]

- **Loans (Lending/Credito)** is the lending of money from the banking institutions to a customer/other organization/entity.

  → [Interest Income]

- **Equity** is the funds either from the bank's owners or, if it is a corporation, by issuing more stock.

Banking Balance Sheet

Balance Sheet	2018	2017
Assets		
+ Cash & Cash Equivalents		
+ Financial assets (Available for sale, held for trading, designated at fair value, held-to-maturity investments)		
+ Loans to customers		
+ Tangible Assets (Property, equipment)		
+ Intangible Assets		
+ Other Assets		
= Total Assets		
Liabilities and Equity		
+ Trading Liabilities		
+ Deposits from banks (Due to Banks)*		
+ Deposits from customers (Due to Customers)*		
+ Debt Securities Issued		
+ Other Liabilities		
= Total Liabilities		
+ Reserves		
+ Share premiums		
+ Share capital		
+/- Profit (loss) for the period/year		
= Total Equity		
= Total Liabilities and Equity		

*** Analysis on short-term borrowings/debts and medium-long term borrowings/debts**

Banks assume 2 primary types of risk:

- **Interest rate risk**
- **Credit risk**

Interest rate risk:

- Interest that a bank earns from loans > Interest it must pay on deposits = Positive interest spread/Net Interest Income.

  The size of this spread is a major determinant of the profit generated by a bank.

- Net interest income will vary, due to differences in:
  - the changing rate
  - the general level of market interest rates

- Banks, in the normal course of business, assume financial risk by making loans at interest rates that differ from rates paid on deposits.

Credit risk

- The potential of a bank borrower to fail in meeting its obligations in accordance with agreed terms.

- When this happens, the bank will experience a loss of some or all of the credit it provided to its customer.

- To absorb these losses, **banks maintain an allowance for loan**. This allowance should be maintained **at a level that is adequate to absorb the estimated amount of probable losses in the institution's loan portfolio**.

Credit risk:

- Basel II → Basel III
- Regulation (EU 1024/2013) assigned specific tasks to the European Central Bank (ECB) regarding the prudential supervision of banks in cooperation with the national Supervisory Authorities of the participating countries.
- Yearly, ECB decides capital requirements that banks should maintain:
  - Common Equity Tier 1 Ratio (minimum 4,5%)
  - Total Capital Ratio (minimum 8%, in Italy 10,5%)

3.
M&A BASICS

- Mergers and acquisitions (M&A) are complex, involving many parties.

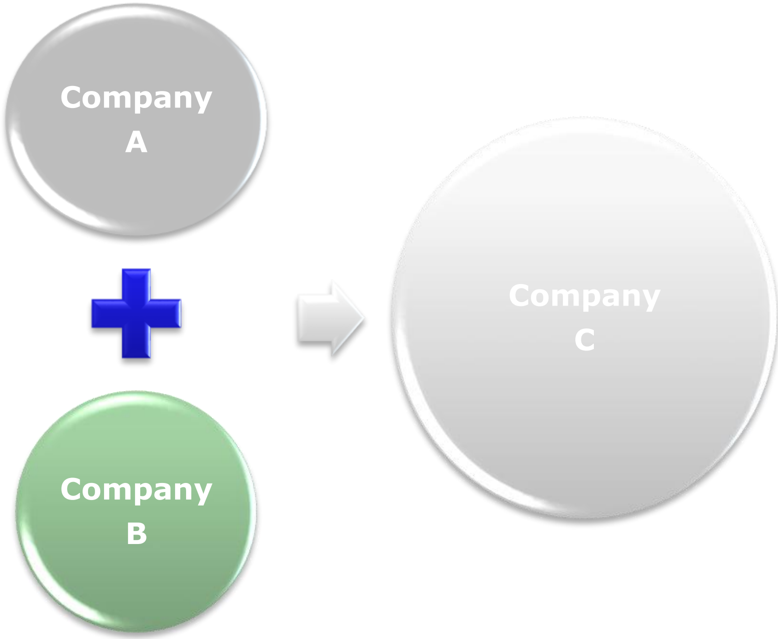
- Mergers and acquisitions involve many issues, including
  - Corporate governance.
  - Form of payment.
  - Legal issues.
  - Contractual issues.
  - Regulatory approval.

- M&A are core activities in the banking industry. However, the total number of M&A deals in the financial services industry in 2013 has declined to 105 in the first half of the year, from 141 in 2012. The combined value of M&A deals has declined by 36% in 2013 from 2012.

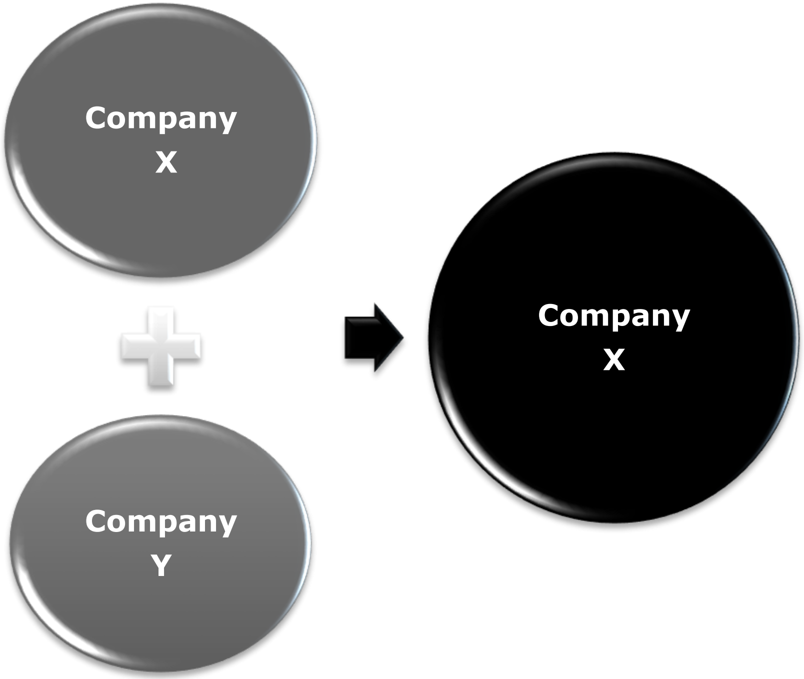
- The banking industry is also facing a **flood of stricter new regulations**. Thus, the scenario may change in the coming years.

- But for **smaller banks** it is simply too expensive to fulfill all new regulatory requirements.

Merger with Consolidation



Acquisition



Different types:

- **Horizontal M&A**: when the acquirer and target companies are competitors in the same industry and they offer the same product and services in terms of end-user.

- **Related M&A**: when the bidder and the target companies are not identical, but share some commonalities such as technology, distribution channels, customer segments, knowledge.

- **Vertical M&A**: when the two companies operate at successive stages of the production process chain.

Government Role

- Direct role in the consolidation decisions through:

  - the restriction of the types of M&As permitted,
  - approval/disapproval decisions for individual M&As.

- The **Herfindalhl–Hirschman Index (HHI)** is a measure of concentration within an industry and is often used by regulators to evaluate the effects of a merger.
- The HHI is constructed as the sum of the squared market shares of the firms in the industry:

$$\text{HHI} = \sum_{i}^{n} \left(\frac{\text{Output of firm } i}{\text{Total sales or output of the market}} \times 100 \right)^2$$

HHI Concentration Level and Possible Government Action			
Post-Merger HHI	Concentration	Change in HHI	Government Action
Less than 1,000	Not concentrated	Any amount	No action
Between 1,000 and 1,800	Moderately concentrated	100 or more	Possible challenge
More than 1,800	Highly concentrated	50 or more	Challenge

M&A aims

- Create shareholder value with M&A deals.

- Revenue enhancement may be achieved:
  - By exploiting operational synergies
  - By leveraging marketing capabilities

- Cost efficiency savings may be achieved:
  - Reducing excess capacity
  - Achieving scale economies
  - Achieving scope economies
  - X-efficiency

- New growth opportunities

REVENUE ENHANCEMENT

Exploiting operational synergies

- Revenue enhancements may be achieved by exploiting operational synergies, such as network externalities.

- In banking, network externalities are mainly related to the **distribution channels** (e.g. on-line and branch based).

- This may lead customers to intensify interactions so as to facilitate product cross-selling, to improve the bank image and also increase the number of customers.

Leveraging marketing capabilities

- Revenue enhancements may also be achieved by leveraging marketing capabilities.

- Merging banks may be able to take advantage of each other's marketing capabilities; for example, **using established distribution channels of the other bank in another country**.

COST SAVINGS

Reducing excess capacity

- For banks with an excess capacity, a M&A deal can help **rationalize the production and take out the excess capacity** by reducing fixed costs (Ex. branch network).

Scale Economies

- M&A transactions can give banks the chance to **change their size and reach the optimal production scale**.
- A careful analysis of scale efficiency gains requires to account for the following factors:
  - Direct associated costs (e.g. all redundancy expenses, cost of branches and office closures) and indirect associated costs (e.g. cost due to the loss of skills and capabilities following workers or team's departure and the risk that these skills will go to the merging banks' competitors);
  - The risk that ineffective post-merger integration will not lead to scale efficiency gains is very relevant in banking since companies have a complex organizational structure and their integration is complicated;
  - The extent of cost savings: this can be estimated on the basis of the minimum (of the) average production cost.

Scope Economies

- In banking, scope economies exist **if the production cost of a universal bank** (offering services on banking, factoring, leasing, insurance, capital markets) **is lower than the sum of production cost of specialized banks in each of these financial services** (i.e. bank, specialized leasing company, specialized factoring firm, insurance company, investment company).

$$C\ (x, y) < C(x) + C(y)$$

X-efficiency

- Various studies found that larger and more efficient banks usually tend to merger with smaller and less efficient banks. This is presumably in order to spread the expertise and procedures of the more efficient institution over additional resources (BEST PRACTICES).

- How to estimate the frontier production function:
  - The **deterministic approach** (**non-parametric** or mathematical programming) → do not specify any functional forms except for the linear interpolation among data points.
  - The **stochastic approach** (**parametric** or econometric) → identify a specific form for the production function.

⇩

- **Different methodologies**:
  - Stochastic Frontier Approach (SFA)
  - Thick Frontier Approach (TFA)
  - Distribution-Free Approach (DFA)
  - Data Envelopment Analysis (DEA)
  - Free Disposal Hull (FDH)

M&A effects over the medium-long term

Efficiency estimation methods

- Methodologies differ in:

  - The assumption they make with regards to the shape of the efficient frontier;

  - The existence of random error and (if random error is allowed) the distribution assumption imposed on inefficiencies and random errors in order to disentangle one from the other.

  - The underlying concept of efficiency
    - Non parametric methods usually measure **technological efficiency (production output/input)**
    - Parametric techniques tend to measure **economic efficiency (price and costs)**

Deterministic (non-parametric) approaches

- **Do not require the specification of a functional form** because the efficient frontier is determined by enveloping a data set as tightly as possible.

- Methodologies:
  - Data Envelopment Analysis (DEA) → prevailing technique
  - Free Disposal Hull (FDH) → special case of DEA

Stochastic (parametric) approaches

- **Disadvantage**: imposing a structured shape of the frontier by specifying a pre-determined functional form.
- **Advantage**: allowing for errors, so they are less likely to misidentify measurement errors and transitory differences in costs, as inefficiency.
- According to the distribution assumption imposed:
  - Stochastic Frontier Approach (SFA)
  - Thick Frontier Approach (TFA)
  - Distribution-Free Approach (DFA)

M&A effects over the medium-long term

Operating performance: Results from literature

Use of accounting data (EVA, ROE, ROA, cash flow)

- It compared bank performances in a time period prior and successive to M&As with the aim of assessing cost, revenue and profit change.
- Time period analyzed: 1year before to 3-5 years after the deal
- **Disadvantages**: performance changes may not be due to M&As, but due to other events which occurred during the same period (e.g. the launching of a new product).

- Kwan and Wilcox (2002):
  - Both target and acquirer banks should be healthy institutions at the time of merger
  - Both merged banks should not have engaged in other mergers 2years before or after the merger date.
  - Ratios: commission costs/total assets; staff costs/total assets; other administrative expenses/total assets.

Market price: Results from literature

- **Event study** method evaluates the benefits resulting from M&As by estimating the **reaction of the market price of quoted banks** involved in the operation around the time of disclosure of the operation itself (announcement date).

- Houston and Ryngaert (1994), Zhang (1995):
  - The acquiring banks have recorded a loss of value;
  - The target firm has increased value for its shareholders;
  - At the aggregate level, a significant effect on the value of the involved banks is not observed;
  - The value created is greater when:
    - The acquiring banks have goods performance in the phase prior to merger;
    - There is a strong territory overlap between the two firms involved in the M&A.

4. SUGGESTIONS FOR THE ANALYSIS

M&A analysis: Some References

- Fiordelisi F. (2009). Mergers and acquisitions in European Banking. Palgrave MacMillan Studies in Banking and Financial Institutions.
- Carretta A., Farina V., Fiordelisi F., Gandolfi G., Omarini A., Schwizer P., Stefanelli V. (2008). Le fusioni in banca. Gestire l'integrazione per creare valore. Esperienze di successo e leve manageriali. Bancaria Editrice
- Koller T., Goedhart M., Wessels D. (2010). Valuation measuring and managing the value companies.
- Davis S.I. (2000). Bank Mergers. MacMillan Press
- Resti A. (2006). Le fusioni bancarie. La lezione dell'esperienza. Bancaria Editrice
- Gualtieri P. (2008). Le aggregazioni tra banche in Europa. AREL
- AA.VV. (1990). Fusioni e acquisizioni delle aziende di credito. Giuffrè Editore. Atti del convegno Modena
- ….

What information you need? …Some examples

MACROECONOMICS DATA	GDP OR VALUE ADDED BY PROVINCES BANKING FINANCIAL TRENDS
BANKING MARKET DATA	AVERAGE BANKING RATIOS LIST OF BRANCHES BY PROVINCE
SINGLE PLAYER DATA	INCOME STATEMENT BALANCE SHEET RATIOS FTE MARKET CAPITALIZATION NO OF BRANCHES GEOGR. COVERAGE OF BRANCHES

What sources?

ABI Associazione Bancaria Italiana

THOMSON REUTERS DATASTREAM

THOMSON REUTERS EIKON

BUREAU VAN DIJK
Company information e business intelligence

aida Analisi Informatizzata delle Aziende Italiane

bankscope World banking information source

PLAYERS' WEBSITES

Istat

M&A analysis

What sources?

FINANCIALS (.xls, .pdf)
- Income Statements
- Balance Sheets
- Ratios key metrics
- Ratio profitability/return/value

M&A DEALS (screenshot)

FORECAST (.xls, .pdf)

SEGMENTS (.xls)
- Ex. Retail, Private, Corporate, Large Corporate, Finance and Corporate Center
- Ex. of Key metrcis: Net Interest Income, Loans, Total Assets

BANKING MARKET

NEWS FROM THE MARKET AND FROM THE SINGLE PLAYER

What sources?

FINANCIALS (.xls, .pdf)

- Income Statements
- Balance Sheets
- Ratios key metrics
- Notes to the financial statements
- Comparison among banks through coding

NO of BRANCHES

- Single bank
- Comparison among banks
- Footprints of Italian branches distribution

What sources?

ABI Associazione Bancaria Italiana

ABI BANK

FINANCIALS (.pdf)

- Income Statements
- Balance Sheets
- Notes to the financial statements

GEOGRAPHICAL DISTRIBUTION OF:

- Banks
- Branches
- Employees

DETAILS ON LOANS, GUARANTEES, DEPOSITS, CUSTOMERS, RISK CONCENTRATION, LENDING AND DEPOSITS RATES

What sources?

PLAYERS' WEBSITES

FINANCIALS (.pdf)

- Income Statements
- Balance Sheets
- Notes to the financial statements

STRATEGIES

BUSINESS/INDUSTRIAL PLAN

MARKET POSITION

HISTORY

NEWS

SPECIFIC PROJECTS

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