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Universidad de Cantabria  
Università degli Studi di Milano

**EIBURS:**  
**The History of European Infrastructure Finance**

6th Annual Meeting of the EIB-Universities Research Action, 23<sup>rd</sup>-24<sup>th</sup> of January 2013

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Luxembourg, 24<sup>th</sup> of January 2013



## Agenda

**Current Research Activities and Preliminary Results**

**Next Steps**

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## Exploring for European Infrastructure Financing in the Long Run

### Current Research Activities and Preliminary Results

#### Outline for Research Unit (UNIMI, BUW, LMU, UNICAN)

##### Main Topics of each Research Line:

- **UNIMI:** Exploring for typologies of infrastructure financing from the Antiquity up to the 19<sup>th</sup> century
- **LMU:** The financing system of infrastructures (telecommunications & transport) in different European countries from the 18<sup>th</sup> century up to WWII
- **BUW:** Financing of the transport sector: railways, waterways and bridges in Europe (19<sup>th</sup>-20<sup>th</sup>c.)
- **UNICAN:** Financing infrastructure in Post-War Europe

# Exploring for European Infrastructure Financing in the Long Run

## Current Research Activities and Preliminary Results

### Outline for Research Line I (UNIMI)

#### 1 Exploring for typologies of infrastructure financing from the Antiquity up to the 19<sup>th</sup> century

##### **Aims of the research I/I:**

- Analysis of the most important typologies of infrastructure financing from the Roman Age to the end of the Napoleonic Age (1815), drawing upon untapped sources ( local archives and literature) >> elaboration of a taxonomy of infrastructure finance
- Defining a picture of how manifold and interrelated infrastructure provisioning and financing are in past societies in terms of local institutions, political regimes, social economic structures and technological push.
- Our hypothesis is that the effectiveness of an infrastructure financing system is correlated to a set of variables that embraces both supply-side and demand-side factors, whose interplay is often path-dependent.
- Sectors under investigation: aqueducts, roads, bridges and canals.

# Exploring for European Infrastructure Financing in the Long Run

## Current Research Activities and Preliminary Results

### Outline for Research Line I (UNIMI)

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#### Preliminary results I/III:

Determinant factors: geomorphological features, institutional framework, legal framework, economic system.

In the Middle Ages two main patterns of infrastructure finance take shape:

- ✧ countries based on Roman law = compulsory work widely spread; this will then be transformed into scope taxes, the support of the affluent and the transfer from central or territorial state revenues>>> states used mostly debt to sustain transfer;
- ✧ countries based on customary law and common law (as well as in transit areas) = toll system became predominant and they will be progressively entrusted first to public management and then to private management, which culminated in the adoption of joint stock companies for canals building.

Despite the coming out of different patterns, financial solutions propagated and circulated.

Every wave of infrastructure innovation and improvement relied on financing solutions that enhanced previous techniques and instruments (i.e. scope taxes were based on the tax state, and joint stock companies on silent partnerships and regulated companies).

## Exploring for European Infrastructure Financing in the Long Run

### Current Research Activities and Preliminary Results

#### Outline for Research Line I (UNIMI)

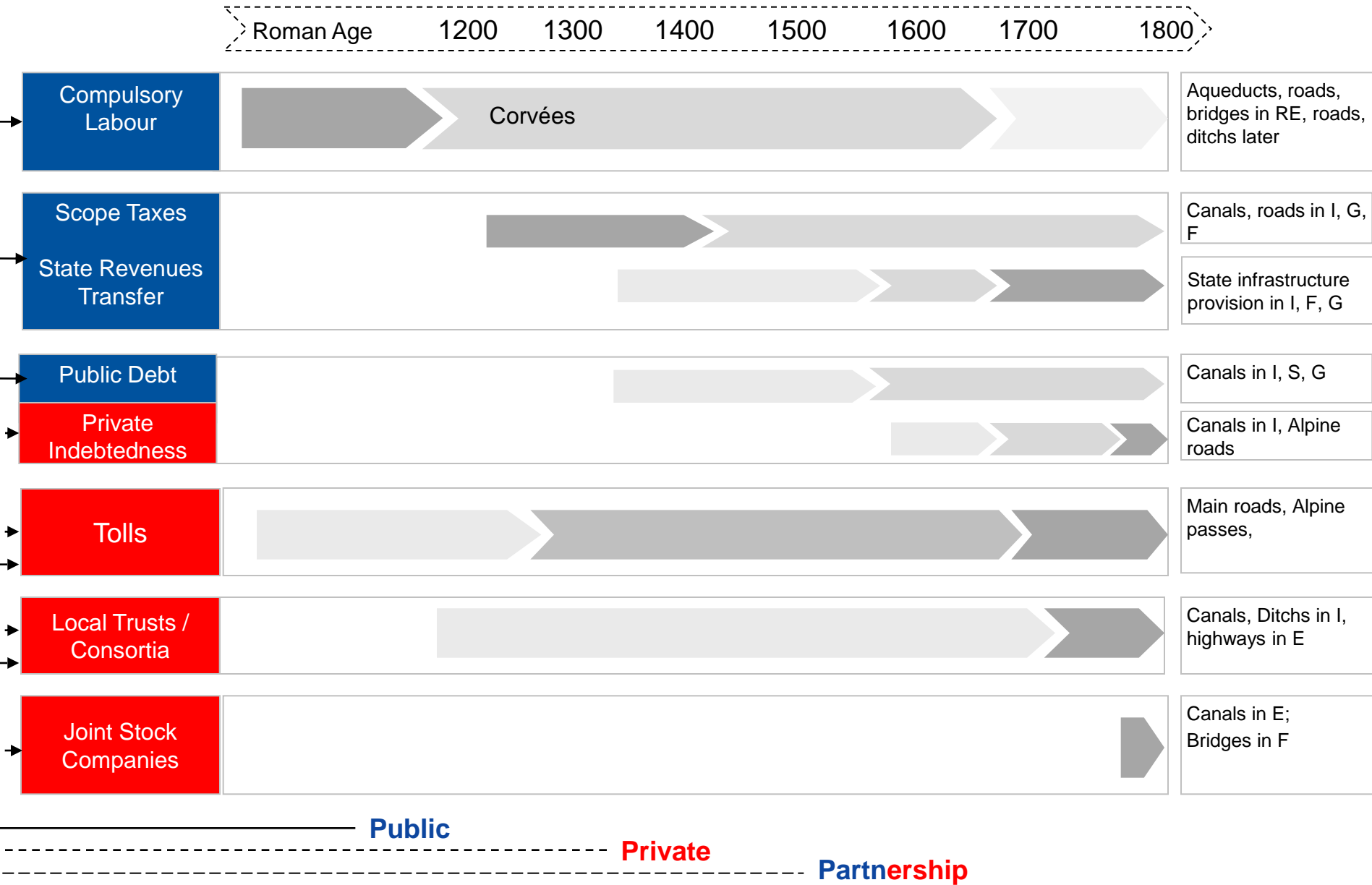
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#### Preliminary results II/III:

- One single model or pattern, fitting all at the same time, does not exist. The same financing system can be successful in one country while it can fail in others, or even in other parts of the same state (i.e. the disastrous introduction of toll-contracting in the Austria crown lands and the productive outcome of the same system in Austrian Lombardy; the different evolution followed by the joint stock companies in France and in England).
- Although the specificities of each context, some solutions adopted in infrastructure finance proved to be pioneer and innovative on a broader and long-run economic score (i.e. joint stock companies for canals under the Bubble Act restriction).

# Preliminary Results III/III

Figure 1. Synoptic Table of Typologies of European Infrastructure Finance from the Roman Age to the 18th c.





# Exploring for European Infrastructure Financing in the Long Run

## Current Research Activities and Preliminary Results

### Outline for Research Line II (BUW)

#### 1 Financing of the transport sector: railways, waterways and bridges in Europe (19<sup>th</sup>-20<sup>th</sup>c.)

##### Aims of the research

- Comparing various projects based on their national, political and technological environment.
- Drawing a picture of the development of infrastructure bonds as one of the most important financing instruments in the 19th and 20th century.

##### Preliminary results

- Collecting macrodata of projects or companies: this provides context to the bonds which will be analysed (i.e. how many bonds had been issued for this project or by this company etc.).
- Specific bond characteristic: this is linked via Ids. This allows economical ex-post evaluation of bonds, useful in a twofolded way: 1) for later case studies analysis 2) to gain deeper knowledge of market behaviour at the time. It is our intention to identify the use and characteristics of bond financing mechanisms in various European countries in the 19th and early 20th century. This topic is closely linked to the infrastructure development, bank market development and development of the political agenda.

# Exploring for European Infrastructure Financing in the Long Run

## Current Research Activities and Preliminary Results

### Outline for Research Line III (LMU)

1

#### The financing system of infrastructures (telecommunications & transport) in different European countries from the 18th century up to WWII

##### Aims of the research

➤ Analysing the financing system of infrastructures (telecommunications & transport) in different European countries from 18<sup>th</sup> century up to WWII

##### Preliminary results

➤ The first half of project is concerned with establishing a framework to identify suitable Case Studies. For each CS the Ostrom's Social-Ecological-System framework (or Künnekes Socio-Technical System which is a reinterpretation of Ostrom's SES and is more suitable for the discussion of infrastructure-related topics) is applied.

➤ What can we get out of it:

1) A framework supporting multidisciplinary research;

2) A comparative analysis between infrastructures or even with ecological system

3) Diagnostics for an efficient and effective governance of infrastructure

4) Changing technology in infrastructures -> what influence did new technologies (improvement of existing technologies) have on regulation or financing methods.

# Exploring for European Infrastructure Financing in the Long Run

## Current Research Activities and Preliminary Results

### Outline for Research Line IV (UNICAN)

#### 1 Financing infrastructure in Post-War Europe

##### Aims of the research

Identify and catalogue infrastructure financing schemes across time, sectors, engagement, region, law and other framework conditions, drawing upon the following sources:

- European Investment Bank, European Union's historical Archive
- OEEC – OECD
- International Bank for Reconstruction and Development

# Exploring for European Infrastructure Financing in the Long Run

## Current Research Activities and Preliminary Results

### Outline for Research Line IV (UNICAN)

#### 2 Financing infrastructure in Post-War Europe

##### Preliminary results

- Analysis of the lending practice undertaken by the EIB with a focus on the first years, a period of great importance upon building ideas and the determinants of the future development of any organization
- Elaboration of a database that will be of great value for future research and analysis of anyone willing to take a deeper study of the EIB.
  
- Next step: to see the impact this lending strategy has had in the long term, its advantages and disadvantages for society, and particularly its impact on growth. Upon doing so, we will find out which effect had infrastructure investment on economic growth and on the economy as a whole. Despite the large number of studies which have attempted to empirically test the relationship between infrastructure and growth, the question is far from being resolved. We will complete our research with case studies of infrastructure finance. We expect this research will shed light on this and other questions, helping to improve investment decisions in the future and contributing to the decision making of international financial institutions.

## Articles and papers

### Working Papers published in <http://ideas.repec.org/s/mil/wpdepa.html>

- Agio, D. & Grove, N., *Role of the State in infrastructure provisioning from 1800s to World war I. telecommunications infrastructure in Europe*
- Berbenni, E., *The public-private financing of the first Italian highways: a historical analysis*
- Clifton, J., Díaz-Fuentes, D. & Revuelta, J., *Explaining Infrastructure Investment Decisions at the European Investment Bank 1958-2004*
- De Luca, G. & Lorenzini, L., *A taxonomy of infrastructure financing in Europe on the long run (12th-18th c.)*
- Crespi Reghizzi, O., *The financing history of urban water infrastructure in Paris (1807-1925) : lessons from the past to enlighten present and future challenges ?*
- Fari, S., *Financing telegraph infrastructures (1850-1900)*
- Florio, M., *Corvée versus money: Micro-history of a water infrastructure in the Alps, the Rû Courtaud, 1393-2013*
- Landoni, M., *The Public-Private partnership in the Italian satellite telecommunication system design: SIRIO and Italsat (1969-1996)*
- Wündsch, B., *From local to trans-regional to trans-national infrastructure networks – historical impacts on drafting a political agenda for European infrastructure networks in the 19th century*

## Presentation of the Eiburs project at International conferences, seminars and meetings

- Cassino (Italy), 21-22 October 2011, *Dieci anni del Centro Interuniversitario di Ricerca per la Storia Finanziaria Italiana: risultati e prospettive*
- Santander (Spain), 22-23 March 2012, *Foreign Direct Investment in Infrastructure: What consequences for development? Experiences from around the world from the post-war to the present*
- Milan (Italy), 22-23 June 2012, XI Milan European Economy Workshop (dedicated to “The History of European Infrastructure Finance”)
- Stellenbosch (South Africa) 9-13 July 2012, XVIth World Economic History Congress, Session n. 109: *“FDI in Infrastructure: What consequences for development?”*

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## Next steps

- Each Research Unit will work on enriching their own research line according to a chronological and geographical level, and enlarging the case studies that can be representative in an evolution perspective of infrastructure financing
- Workshop in Luxembourg (2013)
- Exhibition in Luxembourg (January 2014)
- Final book entailing the completed articles of each Research Unit



**THANK YOU!**