



“Some reflections on the New Era, the main processes/ systems and a key input”

CatChain First Conference on “Micro-dynamics,
Catching-Up and Global Value Chains”, ICRIOS
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“Catching-Up along the Global Value Chain: Models, determinants and policy implications in the Era of the 4IR”

Key concepts (processes, systems ...) in CatChain project

- Catching-Up
- Global Value Chains
- Innovation Systems
- The Era of 4IR
- Business Strategies and Models
- Policy Implications

A New Era, but what's the name of the “neonate”?

- Digital Age, Digital Transformation, 4IR (more “neutral” technical terms)
- More ideological and political connotation
 - Digital Capitalism
 - Capitalism without Capital: The rise of the intangible economy (Jonathan Haskel)
 - Surveillance Capitalism (Shoshana Zuboff)
 - The New Era of Global Intellectual Monopoly Capital (B-A Lundvall).
 - Capitalism Alone (Branko Milanovic) [“liberal meritocratic capitalism” and “political authoritarian capitalism”]

Digital age, digital transformation and 4IR

- “The technology in itself is neither good nor bad. It is the use which human beings make of any technology which determine both the nature and extent of the benefits” (Chris Freeman).
- Not only benefits but also risks, uncertainties, concerns that need to be considered seriously.
- The 4IR is already **happening** throughout the economic domain, the production domain etc. It is **not merely a continuation** of the Information Age, although **it is building on the 3IR**. So, as there are **similarities** but also big **differences**, there is a need for a **broader historical perspective** in the spirit of “reasoned history”.
- From general purpose technology we move to **Global Platform Technologies**.
- **Impact** on the organisation of work, employment “displacement”, “skill bias”, the threat of substituting humans by machines not only in routine works..
- Digital divides, increasing inequalities.
- Impact on Democracy and human rights.
- Human judgment, human collaboration, and collective action.

“Catching-Up”

- Catching up and falling behind.
- Convergence-divergence (in Europe).
- Context matters, Different pathways.
- The possibility of leapfrogging.
- Capability building- based and innovation-led/ driven growth strategies for peripheral intermediate economies and not just macroeconomic policies and general incentives.
- Go beyond sectors to domestic value chains and create a policy-shaping space/ test bed including all groups and stake holders involved. [modern innovation and industrial policy].

Global Value Chains

- National, local, regional value chains.
- Opportunities and threats.
- The relationship between local/ national/ continental and global value chains.

Innovation Systems

- Firms do not innovate in isolation, varieties of NIS, similar to the varieties of capitalism (VoC).
- “Not only National, not only Sectoral. You have to study all together, i.e. the dynamic interplay of the various dimensions global, national, sectoral, regional. The various contexts are not fixed, but change over time” (Franco Malerba in the opening session).
- Innovation, path dependency or/and break, and policy.
- The need for a unified strategy for Research-Innovation-Knowledge Intensive Entrepreneurship.

Key input: Intangible Investments and Assets

- An **increasing** role is played by **intangible capital**, which has been shown to affect both participation to **GVCs** and **productivity**.
- Recent studies on intangibles have pointed out the way in which a **significant part of value added is created** in the **first** and **last** stages of the production chain, **before and after manufacturing**.
- These are typically stages in which **intangible capital matters**, for example **early stages** in which the product is **conceived** (R&D and design) and **late stages** when the product is **sold** (branding, retail and post sale services).
- It is important to note that in recent years the contribution to value added of those stages has increased considerably, enhancing the shape of so called **"smiling curve"**.

["GLOBALINTO PROJECT

Analyzing the productivity contribution of intangible assets and participation in global value chains (UPSud & LIEE-NTUA)"]

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General Aspects

- **Title:** “Capturing the value of intangible assets in micro data to promote the EU’s Growth and Competitiveness”
- **Time period:** 1/2/2019 – 31/1/2022
- **Partners:**
 - University of Vaasa (Coordinator), Finland
 - University of Hamburg, Germany
 - Aarhus University, Denmark
 - University of Ljubljana, Slovenia
 - Paris-Sud University, France
 - National Technical University of Athens, Greece
 - The University of Manchester, United Kingdom
 - Statistics Norway

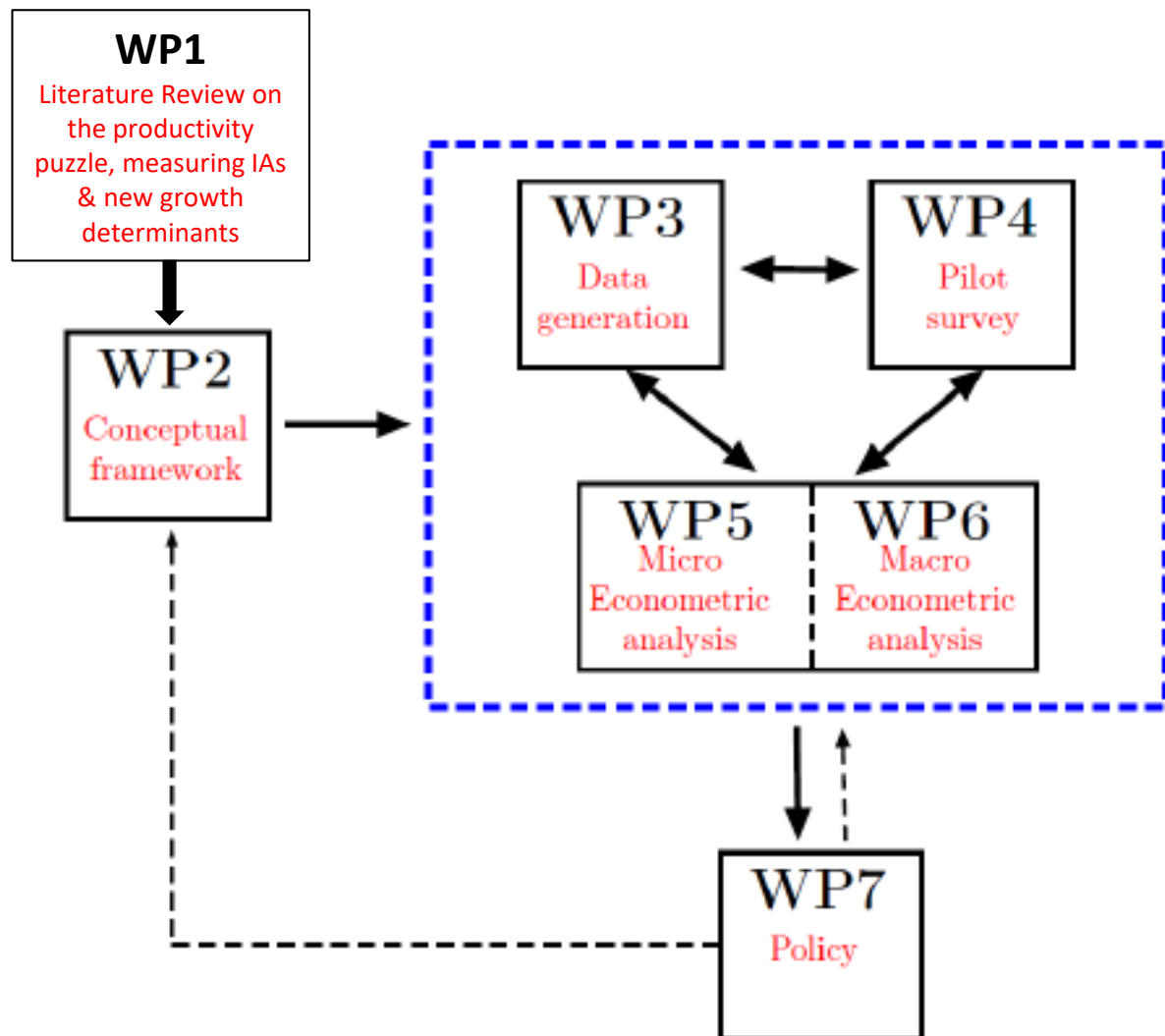
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Main Objectives

1. To develop and refine **new measures of intangible assets** at the firm level, filling an important gap in measurement which has **restricted** statistical production, micro-based analysis and **evidence-based policymaking**.
 - We will work in co-operation with the National Statistical institutes towards the goal of integrating improved statistics into sustained, official statistical production.
2. To analyse the various potential explanations of the **productivity puzzle**, both at micro and macro levels.
3. This also includes the development of **measures of public sector intangibles** and their impact on innovation and productivity.
4. The analyses are novel, focusing **not only on firm behaviour at the micro level** but by also being able to observe **the common growth characteristics in industries and the role of intangibles for changes in market structure**.
5. The analysis also aims to show the **global structure** and fragmentation of **value chains**, and their role in innovation, knowledge diffusion and the exploitation of new knowledge.
6. The project will also explore the **role of policy for the mobilisation of intangibles**.
7. The ambition is not only to assess productivity potential but to decompose its explanatory factors in a way that offer tools for policies to foster innovation and future growth.

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Work Packages Structure



Measurement of Intangible Assets (IAs)

Firm-level Data (Survey)

- Investments in:
 - R&D and acquisition of external knowledge
 - Training
 - Organisation / Business process improvement
 - Software/Databases
 - Design
 - Reputation/Branding

Industry-level Data (WIOD & Eurostat)

- Inputs from the following industries (NACE Rev. 2):
 - Computer programming, consultancy and related activities (62)
 - Information service activities (63)
 - Scientific R&D (72)
 - Advertising and market research (73)
 - Administrative and support service activities (77-82)

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Large scale pilot survey of intangible investments

- **Why a new pilot survey on Intangible Assets?**
 - We will develop and conduct a pilot survey of intangible assets in firms aiming at improving the measurement of intangibles.
 - In doing so, the project will offer a corporate view on intangible capital, innovation work and the life length of IAs obtained through a new questionnaire survey of European firms.
 - The pilot survey is not envisioned as an ad hoc, one-off survey but will be oriented towards ongoing data collection at NSIs, or possible integration of core elements into existing survey instruments (i.e. measurement of IAs in a sustainable manner)

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Large scale pilot survey of intangible investments

- **Questionnaire Development**

The questionnaire was created based on **previous theoretical and empirical evidence** (the literature review we conducted showed that survey-based approaches on micro level IAs are hitherto limited). In particular, it was grounded:

- a) on the questionnaires of three recent survey works attempting to measure intangible assets in different countries [ONS, Imperial College London and NESTA (UK) 2009, 2011; Eurobarometer survey, 2013; INAPP and ISTAT (Italy), 2013]
- b) the NTUA's experience from large-scale firm surveys on innovation and knowledge-intensive entrepreneurship either in the context of EU FP-funded projects (e.g. AEGIS, cre8tv.eu) or national projects (i.e. surveys on the top 2000+ Greek firms),
- c) and other available sources such as additional empirical studies on IAs and their impact on productivity and firm performance, the latest version of OSLO manual, Community Innovation Survey questionnaires etc.

Framework for questionnaire development

Motivation/Obstacles

- Endogenous (improvement of internal processes, innovation enhancement)
- Exogenous (e.g. regulatory framework, financial opportunities)

Controls:

Sector/Market,
Country/Region,
Size, Age

Factors influencing IAs Investments

Firm-specific Characteristics

- Strategic Priorities
- **Organisational Complexity (Internationalization)**
- Human and Technological Resources
- Organisational Capabilities
 - Dynamic Capabilities
 - Design Capabilities
 - Digital Capabilities

Intangible Assets Investments

Six Intangible Assets

1. Training
2. Software/Databases
3. Reputation/Branding
4. R&D and acquisition of external knowledge
5. Design
6. Organisation / Business process improvement

Issues for investigation:

- Level of spending
- Allocation of spending (making internally vs “buying” externally)
- Expected time length of benefit
- Content of investments

Innovation

- Product
- Process
- Organisational
- Marketing

Economic Performance

- Productivity
- Profitability
- Market share
- Growth
- etc.

Tangible Assets

- Physical
- Technological
- Labour

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Large scale pilot survey of intangible investments

- Questionnaire Layout
 - Section A: General information about the firm
 - Section B: Investments in Intangible Assets
 - Section C: Factors influencing investments in Intangible Assets
 - Section D: Firm Performance
 - Section E: Questions on Policy
 - Importance of direct subsidies & tax incentives

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Large scale pilot survey of intangible investments

- **Survey Design**

- We are aiming at a sample of **2000 completed questionnaires** in eight countries
 - **215 questionnaires** from firms based in each small country (Finland, Denmark, Norway, Greece and Slovenia)
 - **310 questionnaires** from firms based in each large-sized country (UK, France and Germany)
- For each country, we focus on both **IAs intensive manufacturing industries** (70% of the sampled firms) to capture the innovative part of manufacturing, and **knowledge-intensive services** (30% of the sampled firms).
- In each sector, we equally divide the firms into **small-sized** (firms with 50-249 employees) and **large-sized** (firms with over 249 employees). The firm size criterion may be extended to 30+ or even 20+ employees especially in small countries.



Thank you

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