Digitalisation and organisational innovation

Lesson 3. Varieties of capitalism

Introduction

- In previous lessons, we examined the transformation of the capitalist system, from **liberal capitalism** (when Schumpeter developed his ideas) to a more **regulated form**, characterized by the rise of **Fordism** (at the micro level) and the **Keynesian welfare state** (at the macro level).

- This structure was functional to mantain **stability**, which was essential for developing **economies of scale** and producing **standardized goods** on a large scale.

- We also saw that Fordism did not apply equally to **all sectors** (such as luxury goods, fashion, or machinery production) and that its **spread varied across countries**, depending on their patterns of **social stratification**.

- From the **1970s** onward, this model entered a crisis due to **structural factors** (market saturation in mass production, competition from newly industrialized countries, with lower labor costs for lower-quality goods) and **cyclical factors** (rising oil and raw material prices, the collapse of fixed exchange rates, and greater instability in international markets).
- With the introduction of **new electronic technologies**, the **1980s** marked the start of a new phase focused on more **diversified and higher-quality production**.
- This shift brought renewed attention to both the **macro level** (institutional characteristics) and the **micro level** (changes in business organization).
- In this new context, research has aimed **to integrate macro and micro approaches**, to define **different models of national capitalism**, each shaped by its specific **institutional context**.

- We will examine **two analytical approaches**, focusing only on the topic of innovation:

1. **Comparative political economy: VoC** and **Growth models**
2. **New economic sociology**, particularly the **structural approach** (networks)

- The first approach is mainly **macro i**n nature, while the second is characterised by a **micro** perspective.

- Today, we will focus on the first approach. **Comparative political economy** is a field of study that examines the mutual relationships between economic, social, and political phenomena, and how they are regulated within different institutional contexts.

- Within this field, we focus on a specific topic that emerged in the late 1980s: the study of the different institutional forms of advanced economies — known as the debate on **varieties of capitalism** and, later, on **growth models**.

Varieties of capitalism (Hall and Soskice 2001)

- Comparative analysis shows that there are different models of capitalism, which vary in how they **regulate** many **key economic activities** — such as firm financing and management, relations with suppliers and customers, human capital training, and industrial relations systems.

- These differences depend from **institutional**, **political**, and **social** factors that have developed **historically** in each country.

- They influence **economic performance** at national, regional, and sectoral levels — including growth, employment, social inequality, and innovation capacity.

- This literature has produced **two ideal-typical** models of contemporary capitalism: on the one hand, the Anglo- Saxon model of **liberal market economies**; on the other, the Rhine model of **coordinated market economies**.
- The first type (which includes countries such as the United States and the UK) is characterised by the greater importance accorded to the **market** in **regulating the economy**.
- In contrast, in coordinated economies (which in addition to Germany and Japan include many central and northern European countries), the joint action of **political and economic institutions** and **interest organisations** tends to **limit market mechanisms** and to produce more extensive and inclusive social protection systems.

- Various studies have analysed the different economic performances offered by these two models.
- With reference to the **eighties**, emphasis was placed on the advantage of the Rhine model, in terms of promoting employment stability and the dynamism of businesses.
- However, in the **following decade** the strong revival of the Anglo-Saxon economies led to the re-evaluation of some of the strengths of the LMEs model.
- In a context of **rapid technological change** and growth in **international competition**, the greater flexibility of liberal economies not only made for a better employment performance – especially in the **service sector** – but also a high level of specialisation in the most dynamic sectors of **high technology**.

- A key focus of this literature is the link between the two models of capitalism and their corresponding **innovation regimes**.

- Hall and Soskice (2001) argue that the two models of capitalism create **specific institutional advantages** that guide firms' innovation in different directions. They present a relational view of firms, seeing them as actors that must build dynamic and innovative capabilities to compete effectively.

- This process depends on the quality of their **relationships**, both inside the firm with **employees** and outside with **key stakeholders** such as: customers, suppliers, financial institutions, and public institutions.

- These relationships are used to solve **‘problems of coordination’** in five spheres of activity that are crucial for company competitiveness:

1. The **industrial relations,** to handle matters related to wages and labour productivity;
2. The **education and professional training**, to provide human capital equipped with the necessary professional skills;
3. The **corporate governance and financing**, to support innovation;
4. The **external relationships**, to deal with other firms, subcontractors and customers;
5. The **internal relationships**, to ensure the cooperation of employees in the achievement of corporate objectives.

- Hall and Soskice argue that, to solve coordination problems, firms tend to adopt the mode of coordination that is supported by their **institutional context**.

- The two models of capitalism show a high level of **institutional complementarity** — meaning that the logic of their different institutions fits together, strengthening overall performance and promoting specific types of behavior.

- In the five spheres mentioned earlier, firms in liberal economies rely mainly on internal hierarchy and market competition, while firms in coordinated economies depend more on non-market relationships — that is, collaborative interactions with other actors.

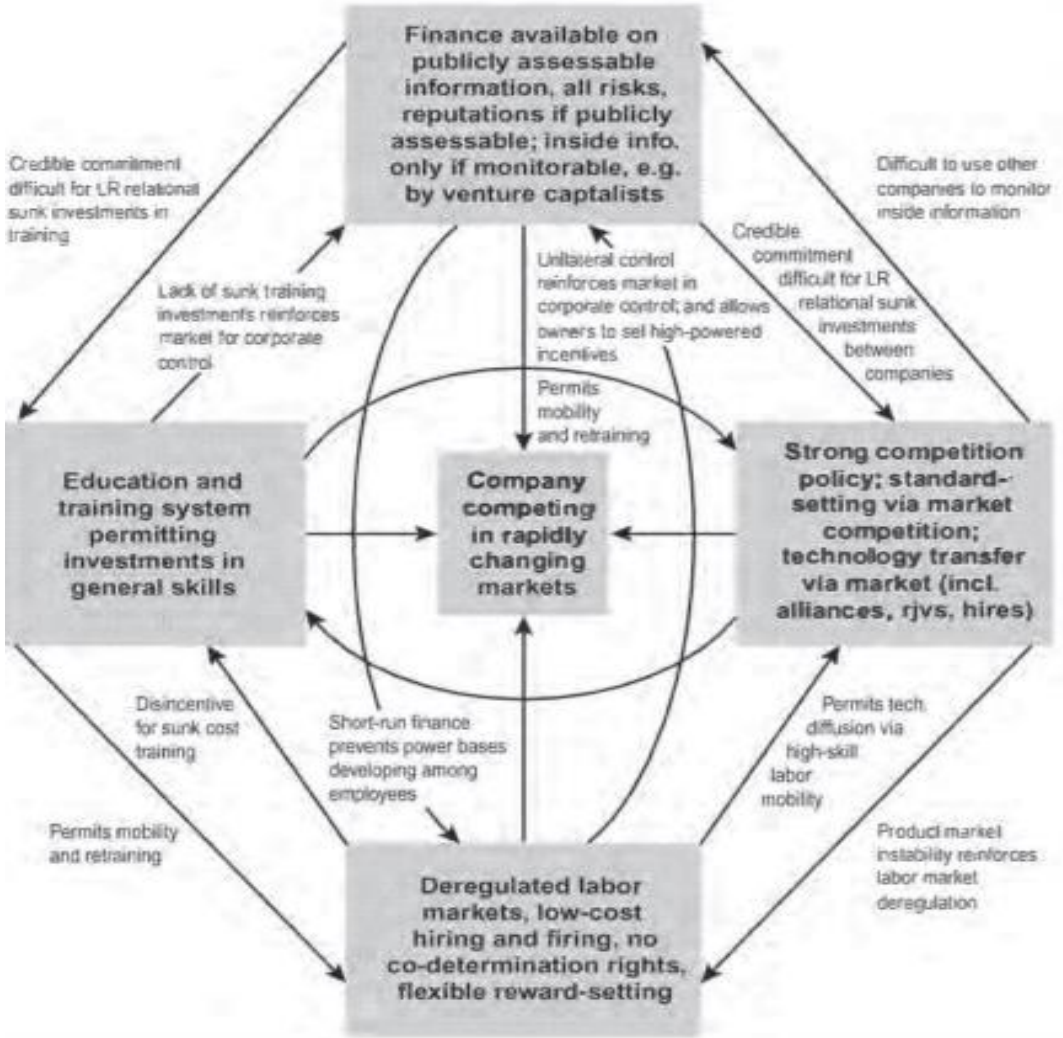


FIG. 1.4 Complementarities across subsystems in the American liberal market economy

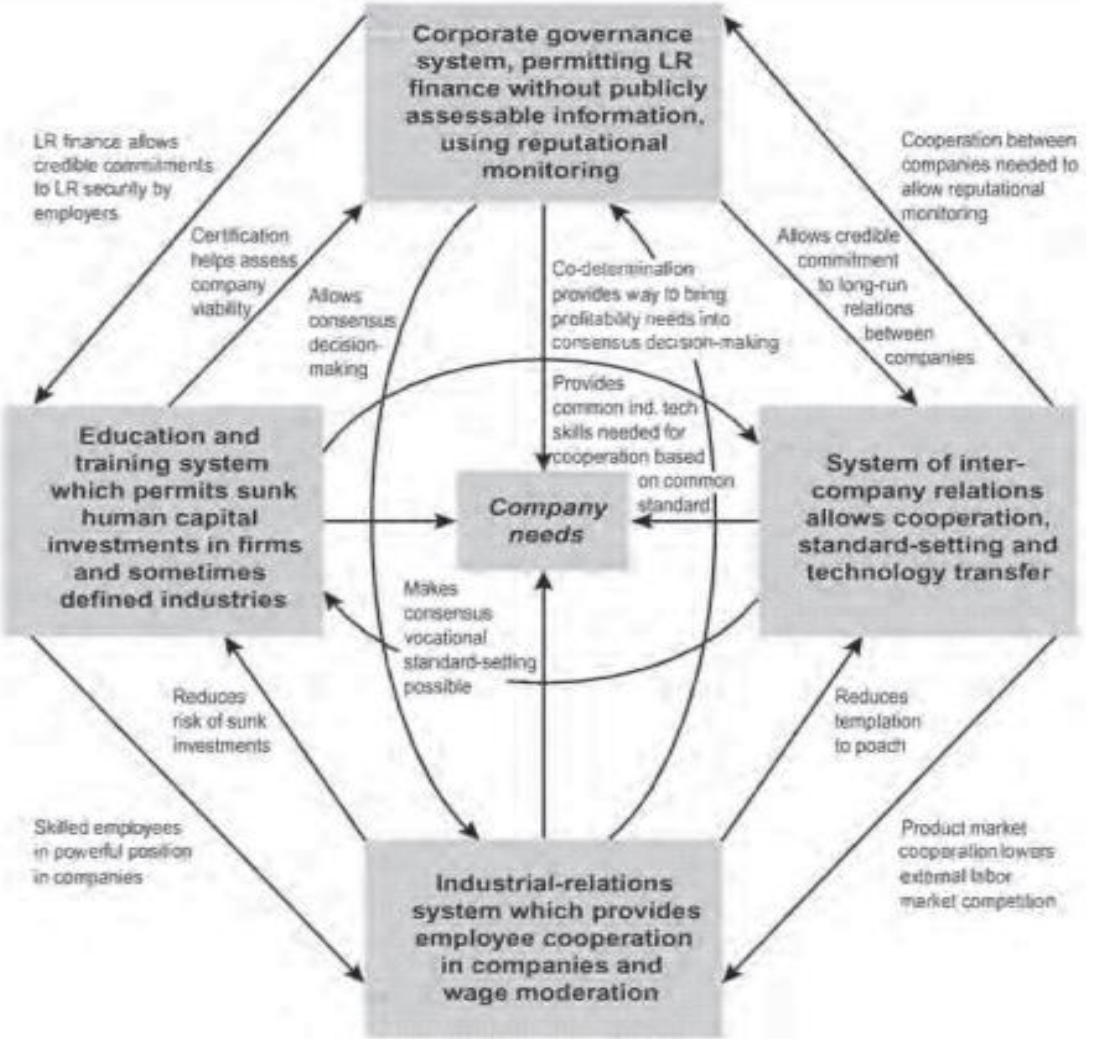


FIG. 1.3 Complementarities across subsystems in the German coordinated market economy

- The **incentives** provided by the institutional framework steer companies to **produce** certain goods, to **specialise** in certain areas, and to **innovate** in a certain way.

- In particular, coordinated economies facilitate **incremental innovations** which lead to small improvements to existing products and production processes.

- This kind of innovation is typical of productive sectors where technological change is not too fast (**slow-tech**), such as mechanical engineering, transport and consumer durables (domestic appliances, etc.).

- In other words, Rhine capitalism sustains a regime of incremental innovation consistent with its institutional structure.

- Coordinated economies, in fact, have a funding system based on banks – on a ‘patient capital’ that knows how to evaluate company results over time; a form of industrial relations that encourages collaboration and wage moderation; a well-trained workforce provided with employment guarantees; and stable and cooperative relations with suppliers and customers.

- All these elements support a long-term management strategy as well as productive specialisation and gradual innovation requiring appropriate skills and medium/long-term development.

- The situation is different in liberal economies, which are characterised by an ‘impatient capital’ (based on the stock market and venture capital) and market relationships that do not ensure long-term stability — both between firms and for employees.

- This model therefore shortens management time horizons, but also provides **flexibility**, **agility** and a greater willingness to **take risks**, which can be valuable for projects involving high uncertainty.

- As a result, this set of attitudes sustains a regime of radical innovation and specialisation in areas characterised by rapid technological change (fast-tech), such as biotechnology, semiconductors, computers and telecommunications, as well as in industries that require constant innovation, such as entertainment and advertising.

- Analysing the productive specialisation of the most representative countries (Germany and the United States), Hall and Soskice found confirmation of these different vocations of the ‘two capitalisms’.

- More recently, this stream of literature has been used to explain some economic developments that do not fully fit the logic of the two models described above (for example, the **rise of innovative high-tech start-ups** in European coordinated economies).

- The policies introduced to develop sectors of the new economy (such as biotechnology, software, and telecommunications) have produced some **unexpected results**: for instance, Germany's success in biotechnology, and Germany and Sweden's achievements in internet-related software, while the UK's performance in biotechnology has been less impressive.

- These outcomes are surprising in light of the Varieties of Capitalism debate, since Germany and Sweden are coordinated economies and the UK is a liberal one. In theory, the UK should have the institutional framework most favorable to highly dynamic and innovative high-tech sectors.

- The problem is solved by **combining the literature on institutional models of capitalism** with that on **sectoral systems of innovation** (which we will discuss in detail in the nexts lessons).

- This strand of literature highlights how **innovative dynamics** vary from **sector to sector**, because each has distinct opportunities for innovation and benefits from the cumulative effects of existing knowledge within its technological regime.

- The puzzle becomes clearer when we see that **new policies** implemented in coordinated economies have encouraged the rise of high-tech firms, but mainly in sub-sectors that fit better with the institutional framework of the Rhine model.

- The thesis can be summarized as follows: a mix of **policies** aimed at creating an institutional environment favorable to the growth of **technological firms** has been quite successful in some European coordinated economies, such as Germany.
- However, analysis of these **firms' sub-sectors** shows that the institutional structure of the Rhine model influenced their choice of specialization.
- In Germany's biotechnology sector, the institutional framework — through its **incentives** and **collective goods** provided — support firms toward sub-sectors with technological systems based on **highly cumulative knowledge**.
- These areas are characterized by **incremental innovation**, such as platform technologies for research labs that perform routine tasks (like DNA or molecule purification) or tools that automate discovery processes (such as screening therapeutic components).
- In other words, these are sub-sectors that align well with the stability and long-term focus, typical of the German industrial system.

- Institutional factors also help explain the **British case**. The UK has a strong presence in biotechnology, particularly in areas involving high uncertainty, but since the late 1990s its results have been rather **disappointing**.

- Compared to the United States, the UK faces two main **scale-related problems**:

1. The scientific and educational system have an **inadequate size** to supply the managers and researchers needed for significant growth in the sector.

2. The **labor market** offers limited opportunities for top scientists in biotechnology, leading many to choose safer jobs in large pharmaceutical firms or to move to the United States.

- A study by Casper and Whitley (2004) of firms listed on new technology stock markets supports the idea of compatibility between institutional settings and innovation types: about 88% of German firms operate in sub-sectors characterized by incremental innovation, while the same share of UK firms work in those driven by more radical innovation.

Convergence or Diversity

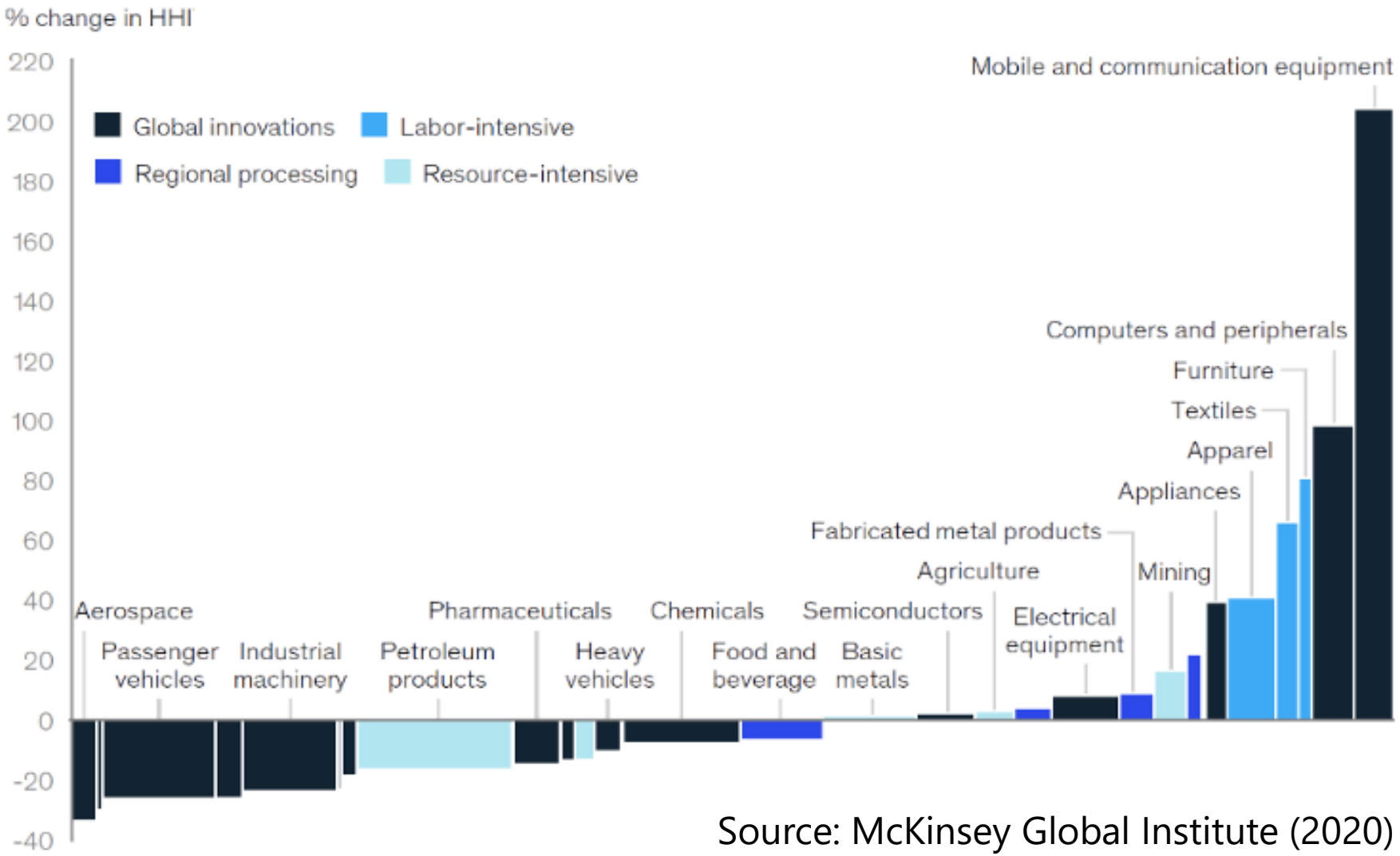
- During the **2000s**, the debate on varieties of capitalism was then enriched by new contributions.
- The Hall and Soskice model faced difficulties in explaining some **important national cases** that could not easily be classified as either liberal or coordinated market economies (**MMEs**). In this context, other types of capitalism were proposed — distinguishing among market, social-democratic, continental, Mediterranean, and Asian models (Amable 2003).
- **Theoretical questions** also emerged about the role of **institutional complementarity** in explaining national performance: do more integrated and coherent institutional systems achieve better economic growth, or are more heterogeneous systems more successful?
- Alongside the supply-side approach, which highlights how national institutions shape firms' behavior, a **demand-side approach** has gained importance, focusing on the **role of governments** and **households**.

- Furthermore, **globalization** has challenged the role of **national economies**:

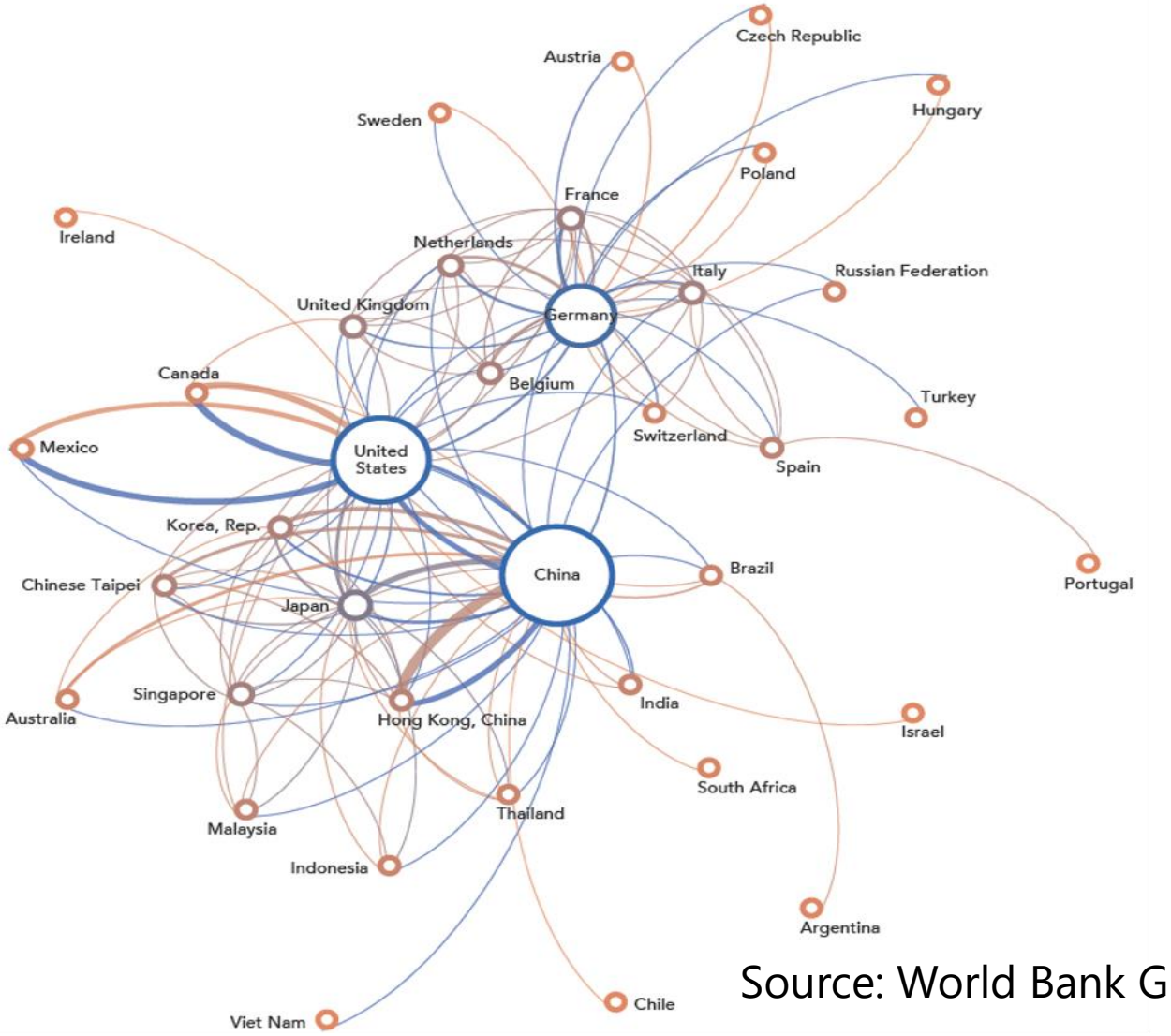
- The rise of **international trade** and **global value chains** has strengthened the specialization of some countries, especially in sectors like smartphones and computers.

- The **integration of financial markets** — at least until the 2007–2008 financial crisis — and the growing **financialization** of economies have also played a major role.

- **Digital technologies** and, more broadly, the **knowledge economy** have become key drivers of change.



Source: McKinsey Global Institute (2020)



Source: World Bank Group et al. (2017)

- These transformations have inspired two new lines of research: on one side, the **role of the state** in promoting innovation has been explored; on the other, attention has shifted from the supply side to the demand side, focusing on **growth models**.

- We will start with the first topic, while the issue of growth models will be discussed in the next lesson.

The (new?) role of the state

- The **role of the state** in **promoting innovation** has returned to the center of attention, including in public debate, thanks to economist Mariana Mazzucato's book (2013). She argues for moving away from **market-centered views** of development and innovation and for recognizing the **entrepreneurial role of the state**.
- To support her argument, the Italian-British economist refers to the well-known distinction between **risk** and **uncertainty,** introduced by American economist Frank Knight (1921).
- **Risk** refers to situations where outcomes are unknown but still predictable to some extent, based on a known probability distribution. In such cases, decision-makers can use rules based on expected utility maximization.
- **Uncertainty**, on the other hand, describes situations where both the outcomes and their probabilities are unknown.

- **Private entrepreneurs** usually avoid situations of uncertainty, such as projects at the frontiers of scientific research.

- However, these projects — which are **capital-intensive** and involve **immeasurable risks** — are essential for **long-term development**.

- They form the foundation of almost all major general purpose technologies discovered in the second half of the twentieth century, including: internet, biotechnology, nanotechnology, and today's renewable energy.

- https://www.iter.org/
- https://www.esa.int/Science_Exploration/Human_and_Robotic_Exploration/International_Space_Station

- This is where the entrepreneurial role of the state becomes important: **funding forward-looking** and **uncertain research projects**, from their **early stages** to the **marketing** of results.
- Mainstream economic theory justifies government intervention only in specific cases, mainly to correct so-called "**market failures**."
- According to Mazzucato, however, this view overlooks the state's **visionary** and **proactive role** in technological change, where it plays two key roles:

1. Providing innovators with **patient capital**, which is often lacking in market economies;
2. **Promoting partnerships** among researchers, universities, public laboratories, and firms, and **guiding them** toward innovations that serve the public good.

- In other words, the entrepreneurial state explores the “**risk landscape,**” creates new markets —especially where large capital investments are needed under conditions of great uncertainty— and takes the lead as both a **risk taker** and a **market shaper**.

- According to this line of research, the economic success of **Asian countries** is linked to the presence of a **developmental state** that both **protects young industries** from foreign competition and promotes the competitiveness and exports of **strategic firms**, while setting strict performance standards for those receiving **public support**.

- But what are the key features of the developmental state?

- The first element concerns its **development strategy**. State action focuses on promoting economic growth through a long-term industrial policy, that recognizes the role of the private sector but also guides it toward international markets.

- This strategy is based on high levels of productive investment, the strategic allocation of capital, and the selective exposure of domestic industries to international competition.

- In other words, East Asian developmental states were able not only to promote economic growth but also to guide and coordinate the industrialization process.

- However, these early studies present a **reductive** and **simplified view** of the relationship between the public and private sectors, in which "***the state dominates civil society and social groups are pacified agents of economics***".

- This perspective can help explain the **Chinese case**, while in other economies — both within and beyond Asia — the situation appears more complex and nuanced.

La Cina in dieci anni punta a raddoppiare il Pil pro capite

Le mosse di Pechino

Il 20 ottobre al via il Plenum del Partito comunista per il prossimo Piano quinquennale

Obiettivo del Piano è far aumentare il Pil dei cinesi da 13.400 $ a 30mila $ al 2035

L'innalzamento delle produzioni di qualità, la nuova urbanizzazione e lo sviluppo verde al centro delle politiche

L'analisi

IL DRAGONE CINESE PIANIFICA E COSTRUISCE

di **Giuliano Noci**

Nel grande pollaio globale, ogni alba è una rappresentazione collettiva. Il Gallo occidentale, gonfio di piume e vanità, sale sul suo trespolo, si schiarisce la voce e lancia il suo canto trionfale, convinto di far sorgere il sole. Dall'altra parte del mondo, il Dragone cinese non canta: pianifica l'alba, la costruisce, la accende con l'ostinazione di chi non crede nei miracoli ma nei piani quinquennali. È la differenza tra chi starnazza per esistere e chi agisce per durare. Dopo le riunioni schizofreniche di Donald Trump, che ha trasformato la politica internazionale in un talk show itinerante a colpi di tweet e smentite, Roma accoglie il ministro degli Esteri Wang Yi. Sarà l'incontro tra due universi simbolici: l'America che urla e Pechino che calcola. Il mondo è in subbuglio, ma il Dragone non si agita: osserva, misura, pianifica. E soprattutto, agisce in silenzio. Una postura che da noi verrebbe scambiata per indecisione, ma che in Oriente si chiama strategia. La Cina non rincorre la cronaca. Da decenni scandisce la propria marcia sul ritmo dei Piani Quinquennali — siamo al quindicesimo — che per noi suonano burocratici, ma per loro sono la partitura della potenza. Niente mano invisibile del mercato: lì c'è un braccio visibilissimo che guida e corregge. È un modello alieno per un Occidente che confonde libertà con casualità. Mentre il Gallo si pavoneggia sul letamaio delle opinioni, il Dragone calcola la traiettoria, misura la pressione e soffia fuoco al momento giusto. Noi lo chiamiamo autoritarismo, loro lo chiamano lungimiranza. E a conti fatti, le classifiche sembrano dare ragione a loro. Altro mito da archiviare: la Cina "copiona". È una barzelletta da salotto occidentale. Oggi il Dragone innova e lo fa con una determinazione chirurgica. Il Global Innovation Index dell'Onu lo conferma: Pechino è entrata nella top ten mondiale, superando la Germania. Non per caso, ma per metodo. Con investimenti monstre in ricerca e sviluppo — oltre 3,6 trilioni di yuan nel 2024, mezzo trilione di dollari — e un apparato che si muove come un'orchestra sincronizzata tra pubblico e privato. La pressione americana? Un boomerang. Le restrizioni tecnologiche hanno solo accelerato l'autosufficienza: mentre Washington erige muri, Pechino costruisce laboratori. E oggi installa più robot industriali di tutto il resto del mondo: tre milioni di automi che non scioperano, non twittano e non chiedono ferie.

E in tutto ciò la Cina?

Il Dragone, tuttavia, non è invincibile. Il carburante che l'ha spinto — manodopera a basso costo, dividendo demografico e infrastrutture faraoniche — si sta esaurendo. Oggi la Cina produce troppo e consuma troppo poco. È come un atleta che ha passato vent'anni in palestra a sollevare pesi ma non ha mai corso: ipertrofico, sì, ma lento. Per evitare di implodere deve trasformarsi, diventare anche un grande mercato interno. Il consumo vale appena il 40% del Pil, contro il 65% dei paesi maturi. Per crescere davvero, il Dragone deve imparare a comprare, non solo a produrre. E per farlo dovrà riscrivere la propria cultura economica, spostando la leva dal comando all'incentivo, dal collettivo al desiderio individuale: una rivoluzione silenziosa, ma titanica. E qui torniamo al Gallo. L'Italia esporta in Cina una quantità risibile rispetto al potenziale, eppure continua a trattare la seconda economia mondiale come un miraggio lontano o, peggio, come un rischio da "gestire con prudenza". Siamo maestri nel cantare alle albe sbagliate: improvvisiamo, commentiamo, rimandiamo. È l'illusione tipica del Gallo: credere che il mondo si fermi finché non canta lui. La visita di Wang Yi dovrebbe essere un campanello di risveglio. Servono piani, non passerelle; strategia, non selfie istituzionali. È l'occasione per sostituire parte del mercato americano, sempre più imprevedibile, con un partner che almeno ha una visione. Ma dialogare con il Dragone non significa inchinarsi: significa capire che oggi la potenza è cognitiva, non solo economica. Che l'intelligenza strategica vale più delle dichiarazioni, e che la pazienza è la nuova forma di audacia. Insomma, mentre il Dragone addestra i suoi robot e disegna il futuro a colpi di algoritmi, il Gallo continua a cantare convinto che basti il rumore per dominare il giorno. Ma il mondo non ascolta più chi canta: guarda chi costruisce. E se l'Italia non vuole restare la comparsa pittoresca nel teatro dei giganti, deve smettere di credere che il suo canto basti a far sorgere il sole. Perché il Dragone, quando decide di svegliarsi, non aspetta l'alba: la accende.

- It is not an **isolated case**.
- The role of the U.S. government has also been crucial in developing **atomic technologies** (the Manhattan Project, 1942–1946);
- Supporting the **space race** (Apollo 11 Mission, 1969);
- and creating the **internet** (the Advanced Research Projects Agency Network, in 1969).

- Following this approach, researchers have also examined **other emerging** countries such as Ireland, Israel, and Taiwan, which have taken leading positions in **high-tech sectors**.
- These “success stories” should be understood in the context of “**global production networks**” (cfr. GVCs): increasingly fragmented and geographically dispersed production systems, that allow emerging countries to specialize in specific stages of production and compete internationally.
- However, these new development strategies are not linked to a **single type of state**.
- We will explore this perspective further in the next lesson, when we introduce the topic of **growth models**.

Conclusion

- In conclusion, what can we learn from the comparative political economy studies discussed in this section? Essentially, **three main lessons**.

- The **first lesson**, the institutional analysis of capitalism is a useful tool for studying national innovation systems in both advanced and emerging economies.

- However, the **ideal-typical models** mentioned earlier need further development:

1. To include **innovation systems** linked to other forms of capitalism (such as those in Mediterranean Europe and emerging economies);

2. To examine the **territorial and sectoral variations** of innovation systems (Chapters 5, 6, and 7).

- The **second lesson** is that institutional arrangements are not fixed and unmodificable, and the dynamics of **institutional change** must also be considered.

- The **third lesson** is that focusing on the institutional structures of the economy and the systemic nature of innovation should not limit the **role of agency**: the intentional actions of public and private actors.

- Reclaiming the analytical importance of agency factors allows us to see how economic actors use **their strategies** and **interpersonal skills** to take advantage of opportunities or overcome the limits of the **institutional context**.

- This leads us to the nexts lessons, which will focus on **socio-economic networks** and their influence on innovation.

Thanks for the attention

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