Chips shortage, the European response: EU Chips Act

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Global semiconductor crisis
Impact on industries

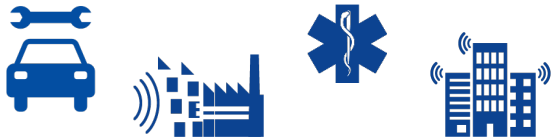
Increasing demand

- Accelerated digital transition
- **Increased demand** for semiconductors fueling severe shortage

Fragile supply chain

- Not resilient to **disruptions** such as COVID-19 pandemic
- **Concentration of production** in Asia (Taiwan, Korea) and high entry costs
- **Geopolitical** tensions (e.g. South China Sea, export control measures)

Detrimental effects across industries



Example: **Automotive**

- **11 million less** cars produced in 2021, $ 210B lost revenues
- **-33%** car sales in Europe

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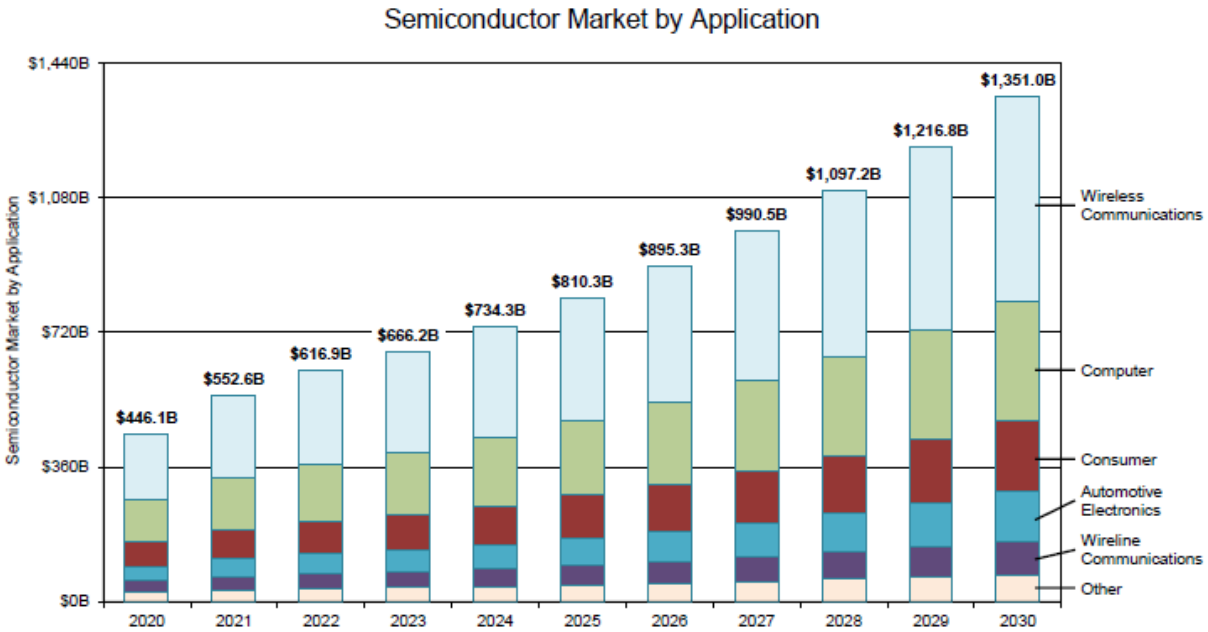
Chip demand growth

Doubling of demand:
Market to exceed USD 1 Trillion before by 2030

Emerging market opportunities: AI, edge computing, digital transformation

Technological changes: miniaturisation limits

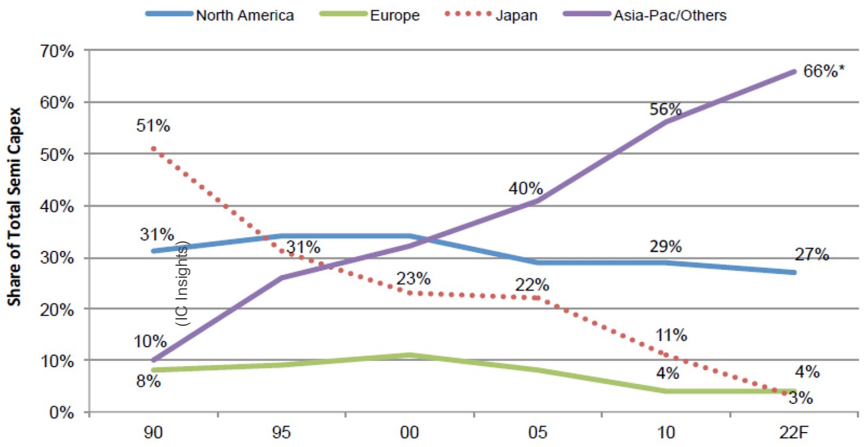


(IBS, 2022)

Digital Decade Target: **Double EU share** in global **semiconductor production** to **20% by 2030**

EU investments in manufacturing capacity

- **Global investments** in capacity grew **3x in 10 years**
- EU industry **spending** did not increase (now ~4%)
- EU's share of **capacity** kept declining over the past 20 years (now ~7%)



⚠ Full dependency => **risks for European sovereignty, security and economy**

- Production is **capital-intensive** with major upfront investments; **risk offset** needed
- Semiconductors is of **key strategic value** with wide impact: main economies designed important incentive measures

The context justifies use of TFEU art 107.3c - aid to facilitate economic activities of common interest

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The EU Chips Act

> *We will present a European Chips Act…*
> *This is not just a matter of our competitiveness.*
> *This is also a matter of* ***tech sovereignty****.*
> *– Commission President Ursula von der Leyen*

Vision

To jointly create a state-of-the-art European chip ecosystem, that includes world-class research, design and production capacities

Key objectives

- strengthen **research and technology** leadership
- build and reinforce its **innovation capacity** in design, manufacturing and packaging
- put in place framework to increase substantially **production capacity** by 2030
- address the acute **skills** shortage, attract new talent
- develop mechanism to monitor **supply chain** and intervene if needed

Chips Act – State of play

Council

- Discussions ongoing in parallel **Industry** CWP and **Research** CWP
- CZ chairs working towards a parallel timeline and alignment
- Adoption of general approach expected December 1st

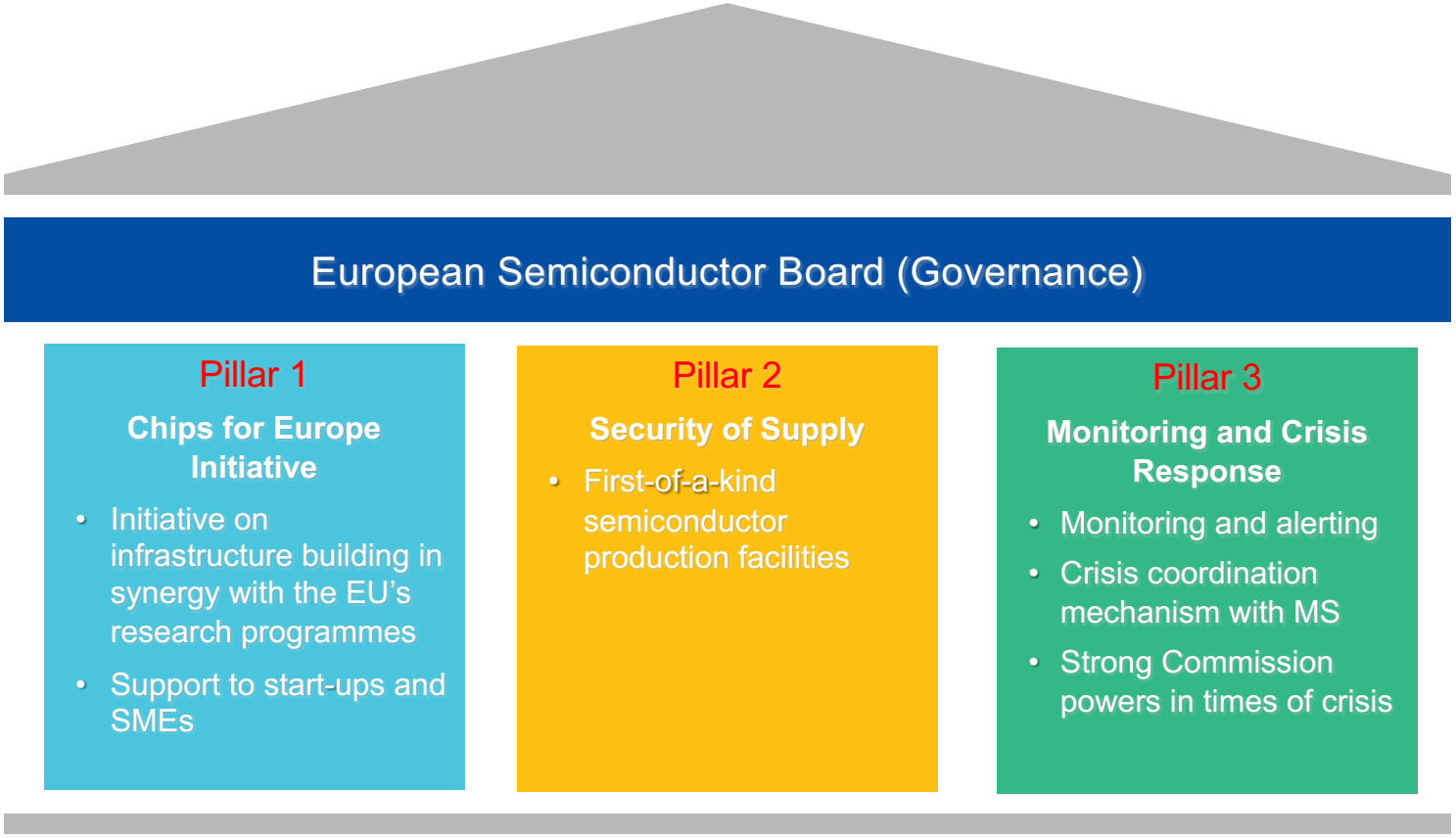
Parliament

- 6 Parliamentary Committees involved, ITRE in the lead: draft opinions published
- Votes scheduled Nov-Jan
- Plenary vote planned for Feb 2023

Trilogue
Council-Parliament-Commission

Adoption

Three pillars of the Chips Act



Pillar 1 - Chips for Europe Initiative
Bridging the gap from lab to fab

Create *large innovation capacity* and *a resilient and dynamic* semiconductor *ecosystem*

Objectives

1. Build a **virtual platform** to reinforce Europe's **design** capacity
2. Enhance existing and developing new **pilot lines**
3. Accelerate the development of **quantum chips**
4. Create a network of **competence centres** across Europe
5. Establish a **Chips Fund** to facilitate access to **loans and equity** by start-ups, scale-ups and SMEs in the value chain

Chips JU

EIC
I-EU

Pillar 2 - Security of supply and resilience
State aid for Manufacturing facilities

Integrated Production Facility (IPF)

First-of-a-kind facility which produces the chips (mostly) for the same undertaking

Open EU Foundry (OEF)

First-of-a-kind facility that produces chips (mostly) for unrelated undertakings

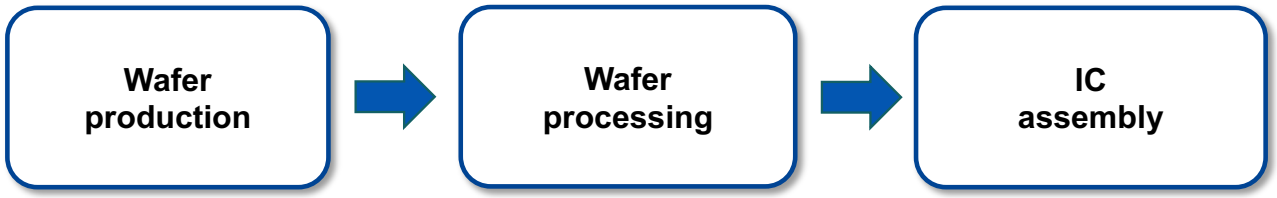
First-of-a-kind facility: to qualify, facility needs to offer innovation in terms of products or process that is not yet present in the Union (not to distort competition)

Conditions: positive impact, security of supply and commitment to next generation

Relevant projects have been announced already by Intel, Infineon, ST-Microelectronics and GlobalFoundries

Pillar 2 – Security of supply and resilience
First of a Kind facilities: what qualifies

The main stages of semiconductor production may be eligible



Innovation can be in terms of:

- technological performance
- process innovation
- energy and environmental performance

Not only miniaturisation

Parallel projects can be recognised as first-of-a-kind

Pillar 3: Monitoring and crisis response

Monitoring stage

- Regular monitoring by Member States and update mechanism for alerts by stakeholders
- Coordinated assessment of crisis response measures by Semiconductor Board

Crisis trigger

When **assessment of Commission provides evidence** of serious disruptions in the supply

- entailing significant negative effects on one or more important sectors, or
- preventing the repair and maintenance of essential products used by critical sectors

Commission implementing act

(preference for normal procedure, possibility for urgency procedure in exceptional cases)

Crisis stage

- **Emergency Toolbox** activated: Information gathering, priority-rated orders, export control
- Intensified coordination in the Board

Pillar 3: Monitoring and crisis response

International partnerships

- Semiconductor value chain is global and spread over different world regions
- We need to cooperate with like-minded partner countries, proactively managing interdependencies to ensure
  - a reliable global marketplace for European products, and
  - security of supply, including in crisis situations.

EU-US Trade and Technology Council

- coordinate measures to secure supply of semiconductors
- joint actions to exchange information and to coordinate on:
  - Early warning systems to detect supply issues
  - Industry-led methods to estimate demand
  - avoid subsidy races
  - Improve understanding of global demand

Further: **Digital Partnership**s with Asian countries

Pillar 3: Monitoring and crisis response

European survey – companies' engagement

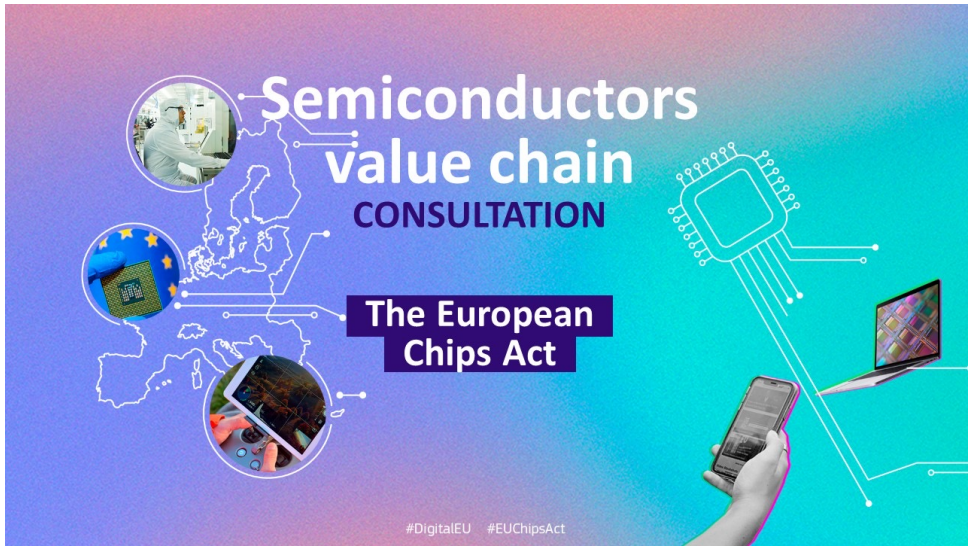
WIN – WIN

- Suppliers/users help the EU Semiconductors Board have a better understanding of the supply chain
- The ensuing report should also be a valuable source of information, as regards to the resilience of the supply chain, for the respondents themselves

Aggregate results (not tracing back to individual companies) will allow

- ➢ Identifying structural weaknesses in the European semiconductor value chain
- ➢ Exploring potential early warning indicators
- ➢ Defining a first approach towards a monitoring mechanism

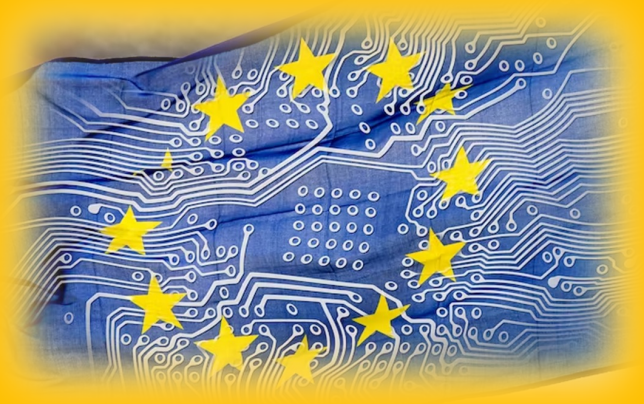
Access to the consultation



More information

https://digital-strategy.ec.europa.eu/en/consultations/european-semiconductor-value-chain-consultation

Thank you



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