**Knowledge is Power – Information Failure in Economics**

English philosopher Francis Bacon said: “Knowledge is power.” In economics, many models assume perfect information, but in reality consumers and producers often have incomplete or asymmetric information. This can lead to market failure.

### 1. Information Failure

Definition: Information failure occurs when consumers or producers do not have perfect knowledge to make rational decisions.

- Asymmetric information: one party knows more than the other

- Imperfect information can cause over-consumption of demerit goods or under-consumption of merit goods

Question: Give an example of a product or market where consumers may not have perfect information:

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### 2. Merit and Demerit Goods

- Merit goods are under-consumed relative to the socially optimal level e.g., education, and healthcare

- Demerit goods are over-consumed relative to the socially optimal level e.g., cigarettes, and ultra-processed foods

Question: Explain why consumers might over-consume demerit goods even if they are aware of the risks:

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### 3. Food Labelling and Real-World Example

- Labels must show ingredients and levels of fat, salt and sugar, but not always the processing level

- Ultra-processed foods may contain chemicals linked to health risks e.g., cancer, diabetes, and strokes

- Consumers have less knowledge than producers, therefore there is asymmetric information

### 4. Yuka App – Enhancing Consumer Knowledge

- Yuka scans barcodes and gives a health score out of 100

- Highlights healthy ingredients and risky additives with explanations

- Helps consumers make rational decisions and may shift demand towards merit goods

Questions:

1. How does the Yuka app reduce information failure in the market?

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2. To what extent will this lead to a socially optimal level of consumption being achieved?

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### 5. Class Activity (Download [Yuka app](https://yuka.io/en/))

Scan 3–5 products using the Yuka app and record results:

|  |  |  |
| --- | --- | --- |
| Product | Yuka Score | Notes / Surprises |
|  |  |  |
|  |  |  |
|  |  |  |

Discussion:
- Were you surprised by the scores?
- How might this influence consumer demand and producer behaviour?
- Does it illustrate the role of information in moving towards socially optimal consumption?

### 6. Plenary

Complete the sentence: "Knowledge is power in economics because…"

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### 7. Exam-Style Questions

**Short Answer (4 marks):**
Define asymmetric information and give one example in the food market.

**Data Response (10 marks):**
Using a diagram, explain why information failure may lead to the over-consumption of demerit goods such as ultra-processed foods.

**Essay (25 marks):**
“Apps such as Yuka are more effective than government regulation at solving the problem of information failure.”
To what extent do you agree with this statement?

Teacher Version

## A Level Economics Worksheet – Teacher Version

### 1. Information Failure – Model Answers

- Example: Consumers buying snacks without knowing additive risks
- Asymmetric information leads to over-consumption of demerit goods or under-consumption of merit goods
- Markets fail to achieve allocative efficiency without perfect information

### 2. Merit and Demerit Goods – Model Answers

- Merit goods: education, healthcare → under-consumed due to lack of information
- Demerit goods: cigarettes, ultra-processed foods → over-consumed even with known risks due to habits, short-term pleasure, or peer influence

### 3. Food Labelling – Guidance

- Labels often fail to convey full processing or health risks
- Consumers may underestimate risks → asymmetric information
- Example: ultra-processed foods, additives, long-term health effects

### 4. Yuka App – Guidance

- Reduces information failure, enabling more informed consumer choices
- Can shift demand towards merit goods and reduce demand for demerit goods
- Potential behavioural effects if app becomes addictive (obsessive checking)

### 5. Class Activity – Teacher Notes

- Use activity to illustrate information failure, merit and demerit goods, shifts in demand and social welfare
- Discuss policy implications: labelling regulations, consumer education

### 6. Plenary – Model Answer

- "Knowledge is power in economics because it allows consumers to make informed decisions, reduces misallocation of resources, and encourages markets to move closer to socially optimal outcomes."

### Extra Teacher Tips

- Highlight real-world examples: snacks, drinks, cosmetics
- Reinforce market failure concepts and diagrams if possible
- Encourage discussion of government interventions such as regulation, taxes, or subsidies

**Question:** Define asymmetric information and give one example in the food market.

**Short Answer (4 marks):**
**Question:** Define asymmetric information and give one example in the food market.

**Answer Guide:**

* **Definition:** Asymmetric information occurs when **one party in a transaction has more or better information than the other**.
* **Example:** Producers of ultra-processed foods know the exact level of additives and chemicals, but consumers often do **not know the potential health risks**.

**Data Response / Diagram (10 marks)**

**Question:** Using a diagram, explain why information failure may lead to over-consumption of demerit goods such as ultra-processed foods.

**Answer Guide:**

1. **Diagram:** Draw a standard **demand and supply graph** for a demerit good:
	* Label the axes: Price (vertical) and Quantity (horizontal)
	* Draw the **private demand** based on consumer perception
	* Draw the **social demand** reflecting the true costs to society
	* Supply curve: standard upward sloping
2. **Explanation:**
	* Consumers underestimate the negative effects of demerit goods (health costs, future healthcare)
	* Private demand exceeds social demand → quantity consumed is higher than socially optimal
	* Over-consumption occurs → **market failure**
3. **Link to Information Failure:**
	* Imperfect or asymmetric information prevents consumers from making fully informed decisions
	* Leads to too much consumption of demerit goods

**Essay (25 marks)**

**Question:** “Apps such as Yuka are more effective than government regulation at solving the problem of information failure.” To what extent do you agree?

**Essay Structure (Balanced Argument):**

1. **Introduction:**
	* Define information failure and asymmetric information
	* Explain why it matters for demerit goods (over-consumption)
2. **Point 1 – Effectiveness of apps like Yuka:**
	* Provide **consumer knowledge in real time**
	* Consumers can scan products, see additives, and make informed decisions
	* May reduce over-consumption of unhealthy foods
3. **Point 2 – Advantages over government regulation:**
	* Faster adaptation – apps can update database frequently
	* Personalized ratings and explanations are easier to understand
	* Encourages behavioural change through transparency
4. **Point 3 – Limitations of apps:**
	* Not all consumers use apps → coverage limited
	* Risk of addictive checking → can act as a demerit good itself
	* Some may ignore warnings → behaviour change not guaranteed
5. **Point 4 – Role of government regulation:**
	* Mandatory labelling, sugar/fat taxes, advertising restrictions
	* Can ensure **everyone is informed**, not just app users
	* More equitable → addresses those without smartphones
6. **Evaluation / Judgment:**
	* Apps are effective for **motivated consumers**, but may not reach everyone
	* Government intervention ensures a **minimum standard of information** for the whole population
	* Most effective approach: **combination of apps and regulation**
7. **Conclusion:**
	* Restate key points
	* Provide a balanced answer, emphasising the extent (partial agreement)