Economics Fundamentals

Lecture 3: Rationality, Choices and Opportunity Cost

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Recap: Previous Lectures ⏪

Lecture 1: Economics, Scarcity, Efficiency, Macro vs. Micro

Lecture 2: Three economic problems (WHAT, HOW, FOR WHOM) and economic systems (Market, Planned, Mixed)

🎯 **Today's Focus**:

🧠 How do people make economic decisions?

🤔 What is rationality?

💰 **Opportunity cost** — one of economics' most powerful concepts!

Economic Rationality

What Does “Rational” Mean? 🧠

ECONOMIC RATIONALITY

People are **rational decision-makers** who seek to maximize their well-being (utility) by using cost-benefit analysis and responding predictably to incentives.

Key characteristics:

✅ People have **clear preferences**

✅ They seek to **maximize their well-being** (utility)

✅ They respond **predictably** to incentives

✅ They use **cost-benefit analysis**

💡 **Important**: Rational ≠ Perfect or emotionless! People can be rational within their information and cognitive limits (bounded rationality)

Cost-Benefit Principle ⚖️

THE FOUNDATION OF RATIONAL CHOICE

An action should be undertaken **if and only if** the benefits exceed the costs.

Decision Rule:

$$\text{Decision Rule: } \begin{cases} \text{Do it} & \text{if } Benefits \geq Costs \\ \text{Don't do it} & \text{if } Benefits < Costs \end{cases}$$

In practice:

- Benefits = What you gain
- Costs = What you give up
- Compare net benefit of alternatives

Tourism Example: Cost-Benefit 🏛️

Should a tourist visit the Belém Tower in Lisbon?

Benefits ✅

📷 Photos & memories

📚 Educational value

❤️ Historical experience

😄 Satisfaction

Estimated value: €20

Costs 💸

🎫 Entry ticket: €6

🚌 Travel time: 30 min

⌛ Waiting time: 20 min

🕐 Value of time: €15/hr

Time cost: €12.50

Total cost: €18.50

👉 **Decision**: Benefits (€20) > Costs (€18.50) → **Visit!**

But if waiting time increases to 60 min, costs rise to €28.50 → **Don’t visit!**

Marginal Analysis

Decisions at the Margin 📈

MARGINAL ANALYSIS

Decisions are made **at the margin** — evaluating the additional benefit versus the additional cost of one more unit.

Key terms:

⬆️ **Marginal Benefit (MB)**: Benefit from one additional unit

⬆️ **Marginal Cost (MC)**: Cost of one additional unit

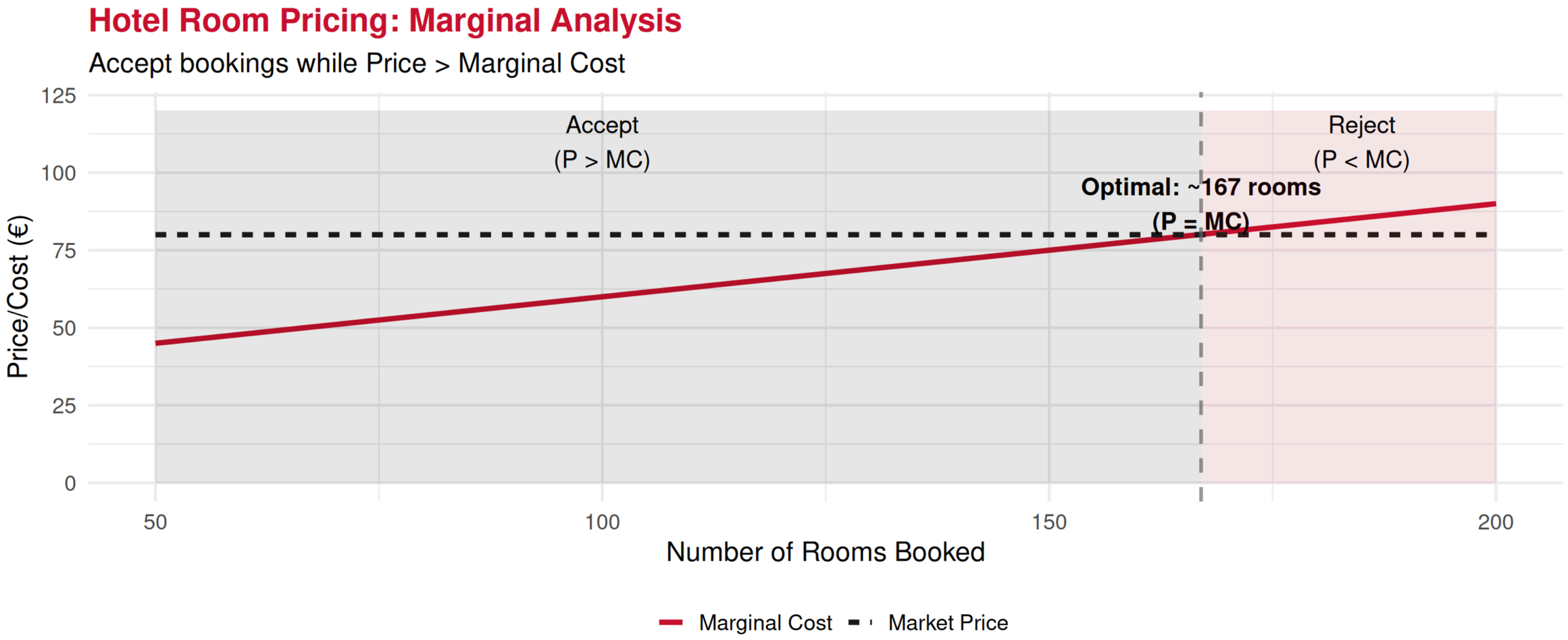
Optimal Decision Rule:

$$\text{Continue activity while } MB \geq MC$$

Stop when $MB < MC$

Marginal Analysis: Hotel Rooms

Should a hotel accept one more booking?



Hypothetical illustration of marginal decision-making

Opportunity Cost

The Most Important Concept! 🌟

OPPORTUNITY COST

The value of the **best alternative foregone** when making a choice. It's what you give up, not what you pay.

Key Points 🔑

👉 It's what you **give up**, not what you pay

👉 It's the **next-best** alternative (not all alternatives)

👉 It includes both **explicit** (money) and **implicit** costs (time, foregone opportunities)

Decision Rule with Opportunity Cost

When deciding: You should choose option A over B if:

$$\overbrace{B_A}^{\text{Gross Benefit of } A} \geq \underbrace{\overbrace{C_A}^{\text{Monetary Cost}} + \underbrace{(B_B - C_B)}_{\text{Surplus of best alternative}}}_{\text{Opportunity Cost of } A}$$

💡 In simpler terms: Choose A if its benefits exceed both its direct costs AND what you're giving up from the best alternative!

Opportunity Cost Examples 💰

Simple Example: You have €100 and 4 hours free on Saturday afternoon.

Options (value, cost, time):

A. Visit museum (€15, €10, 3h)

B. Beach trip (€20, €0, 4h)

C. Movie (€22, €12, 2h)

D. Study at home (€10, €0, 4h)

If you choose A (museum):

💸 **Explicit cost**: €10

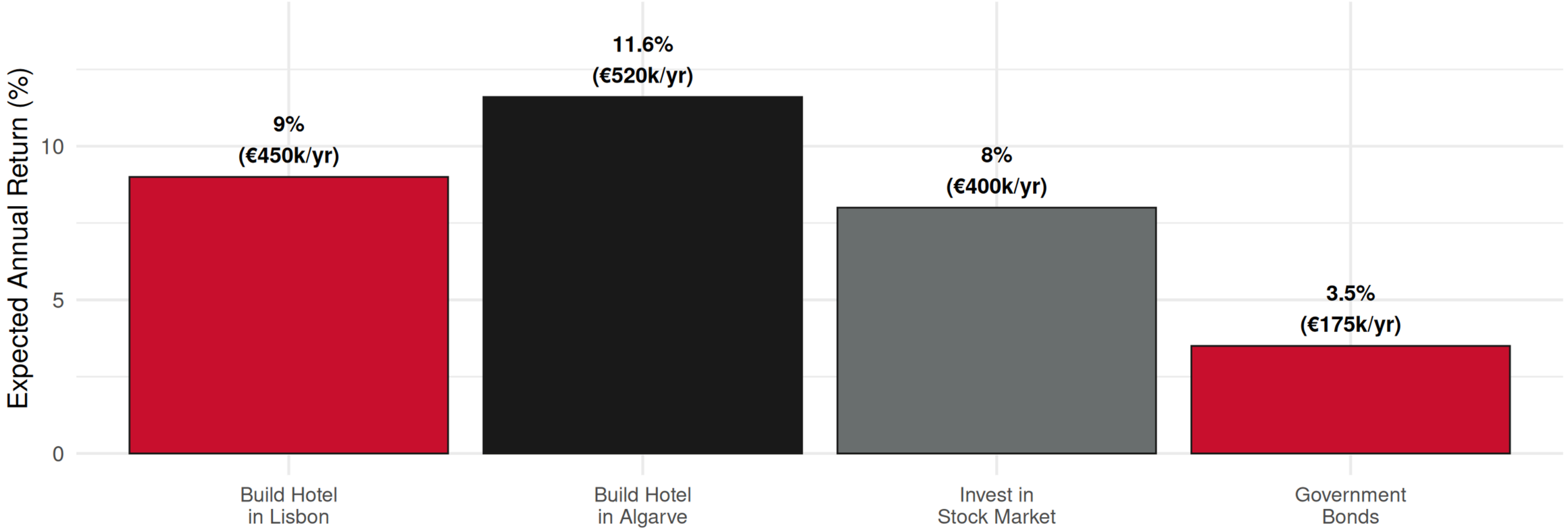
🤔 **Opportunity cost**: Value of best alternative foregone

- Can’t go to beach (value: €20)
- **Total opportunity cost**: €10 + €20 = **€30**

Opportunity Cost in Tourism Investment 🏢

Investment Alternatives: Expected Returns

Opportunity cost of choosing Lisbon hotel = foregone €520k from Algarve (best alternative)



Hypothetical illustration of investment alternatives

Sunk Costs: Ignore Them! 🚫

SUNK COST

A cost that has already been incurred and **cannot be recovered**, regardless of what decision you make now. Sunk costs should be **ignored** in decision-making!

Examples of sunk costs:

❌ Non-refundable deposits

❌ Past advertising expenses

❌ Money already spent on failed projects

❌ Time already invested (can't get it back)

⚠️ **Common mistake**: "I've already invested so much, I must continue!"

✅ **Correct thinking**: "What are my future costs and benefits from here?"

Sunk Cost Example: Tourism Investment 🚧

Scenario: Hotel construction halfway done

Spent so far (SUNK):

- €2M on land
- €3M on construction
- **Total**: €5M

❌ Cannot be recovered!

To complete (FUTURE):

- €4M more needed
- Expected profit: €500k/year

❓ Should you finish?

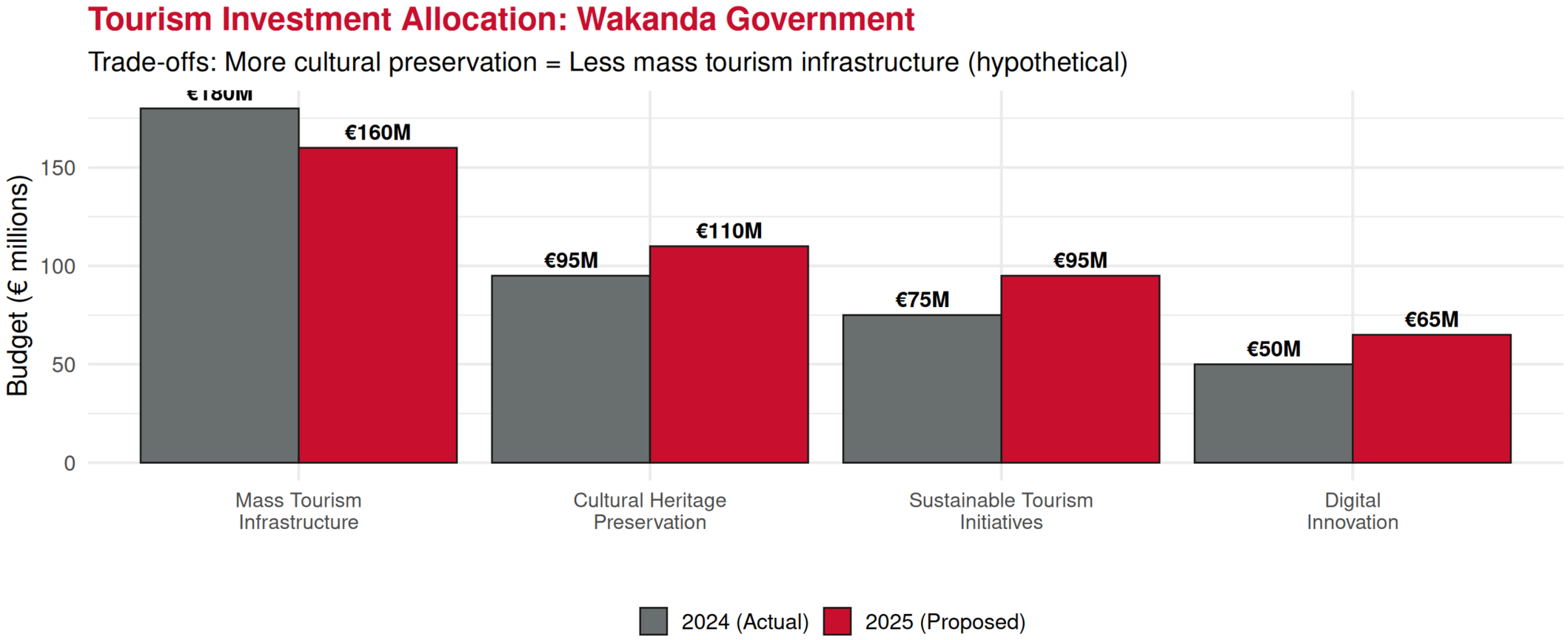
👉 **Correct analysis**: Ignore the €5M sunk cost!

Compare: €4M future cost vs. future benefits

If NPV of future benefits > €4M → **Finish it!**

If NPV of future benefits < €4M → **Abandon!** (Don’t throw good money after bad)

Trade-offs in Tourism Policy ⚖️



👉 **Opportunity cost of increasing cultural preservation by €15M** = €20M less for mass tourism infrastructure

Making Better Decisions ✅

Checklist for Rational Economic Decisions:

1️⃣ Identify **all alternatives**

2️⃣ Estimate **benefits** of each alternative

3️⃣ Estimate **costs** (including opportunity costs!)

4️⃣ **Ignore sunk costs** (they're irrelevant)

5️⃣ Consider **marginal** changes (not just totals)

6️⃣ Choose alternative with **highest net benefit**

💡 **Remember**: Good decisions maximize net benefit (Benefits - Opportunity Costs)

Common Decision Mistakes ❌

Mistake 1: Ignoring opportunity costs

- Thinking only about money paid
- Not considering value of alternatives foregone

Mistake 2: Counting sunk costs

- “I’ve already invested so much”
- Looking backward instead of forward

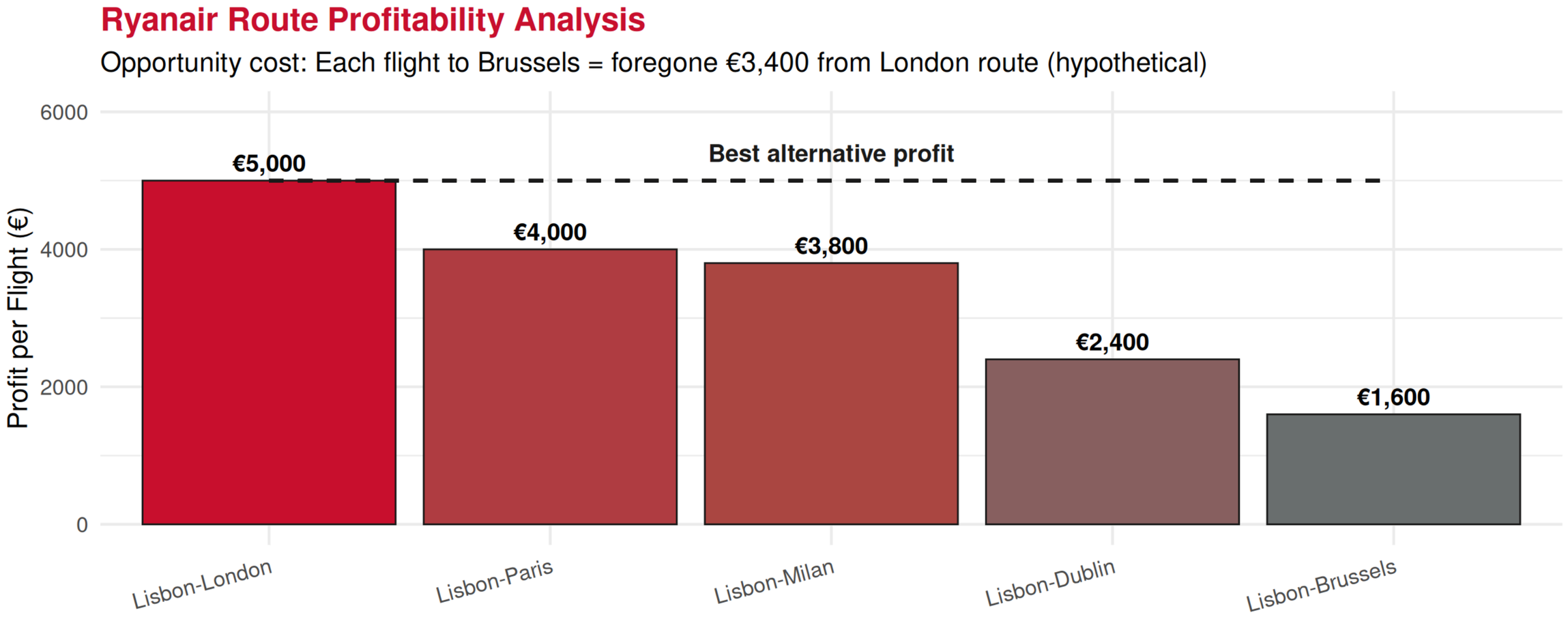
Mistake 3: Ignoring marginal analysis

- Looking at totals instead of additional units
- Not considering “one more” decisions

Mistake 4: Not comparing net benefits

- Choosing highest benefit option
- But ignoring that it also has highest cost!

Real Business Case: Ryanair Strategy ✈️



👉 **Decision**: Cancel Brussels route, add London frequency → Better use of aircraft (opportunity cost logic)

Key Concepts Summary 📋

Concept	Definition
Rationality	People maximize well-being via cost-benefit analysis
Cost-Benefit Principle	Do it if benefits ≥ costs
Marginal Analysis	Decisions at the margin (additional units)
Opportunity Cost	Value of best alternative foregone
Sunk Costs	Ignore them! (already spent, irrelevant)
Trade-offs	Choosing one thing means giving up another

Exercises 📝

Practice Time!

Real-world applications of opportunity cost.

Exercise 1: Multiple Choice

A hotel owner can use her restaurant space for:

- Option A: Fine dining (€80k annual profit)
- Option B: Buffet restaurant (€60k annual profit)
- Option C: Rent to external operator (€50k annual rent)

She chooses Option A. What is the opportunity cost of this decision?

A. €80,000

B. €60,000

C. €50,000

D. €110,000

Answer: B (€60,000) - Opportunity cost = value of **best alternative foregone**. The next-best alternative to fine dining (€80k) is buffet (€60k), NOT the sum of all alternatives.

Exercise 2: Multiple Choice

You bought a non-refundable €200 ticket to a concert. On the day of the concert, you feel ill. A friend offers you €50 for the ticket (transferable). What is the opportunity cost of ATTENDING the concert?

A. €200

B. €150

C. €50 + discomfort from illness

D. €250

Answer: C (€50 + discomfort) - The €200 is SUNK (can't recover even if you don't go). If you attend: you give up €50 (could sell) + endure discomfort. Opportunity cost = what you give up by attending.

Exercise 3: Open Question

Scenario: A tour operator in Porto must decide between two summer season strategies:

Strategy A: Focus on luxury tours

- Expected revenue: €500,000
- Variable costs: €280,000
- Fixed costs already committed: €80,000

Strategy B: Focus on budget tours

- Expected revenue: €420,000
- Variable costs: €200,000
- Same fixed costs: €80,000

Questions:

a. Calculate profit for each strategy

b. What is the opportunity cost of choosing Strategy A?

c. Which strategy should be chosen and why?

d. Are fixed costs relevant to the decision? Explain.

Exercise 3: Solution (Part a & b)

a) Profit calculation:

Strategy A (Luxury):

$$\text{Profit}_A = €500,000 - €280,000 - €80,000 = €140,000$$

Strategy B (Budget):

$$\text{Profit}_B = €420,000 - €200,000 - €80,000 = €140,000$$

Both strategies have equal profit!

b) Opportunity cost of Strategy A:

Opportunity cost = Direct Cost + Profit from best alternative foregone = **€140,000 + €360,000 = €500,000** (Strategy B profit)

Exercise 3: Solution (Part c & d)

c) Which strategy to choose?

From pure profit perspective: **Indifferent** (both €140,000)

But consider other factors: Risk, reputation, market trends, resource requirements

👉 **Recommendation: Strategy B (budget)** because:

- Lower variable costs (€200k vs €280k) = **less risk**
- Higher revenue-to-variable-cost ratio: **2.1 vs. 1.79**
- More resilient to demand fluctuations

d) Are fixed costs relevant?

❌ **NO!** Fixed costs (€80,000) are **SUNK** — already committed regardless of strategy choice.

✅ Only **variable costs** matter for this decision (they differ between strategies).

This is a key example of ignoring sunk costs in decision-making!

Next Lecture 📚

Lecture 4 (February 13, 2026):

- **Production Possibilities Frontier (PPF)**
- Efficiency, Trade-offs, and Economic Growth
- Comparative Advantage and Specialization

💡 **Preparation**: Review today's opportunity cost concept — it's the foundation for understanding PPF!

Thank You! 👋

Questions?

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Next class: Thursday, February 13, 2026