Discussion Assignment: Economic Growth Comparison Between France and Korea

# Introduction

From 1996 to 2000, France experienced an average annual per capita economic growth rate of 1.9%, while Korea's corresponding rate was 4.2%. As of 2003, France's per capita real GDP stood at $28,900, compared to Korea's $12,700. Assuming these growth rates remain constant, this analysis will compute the doubling time for each country's per capita GDP and project their respective per capita GDPs for the year 2045.

# Doubling Time Calculation

The doubling time of an economic indicator under constant growth can be estimated using the Rule of 70:  
  
Doubling Time = 70 / Annual Growth Rate (%)  
  
France: 70 / 1.9 ≈ 36.84 years  
Korea: 70 / 4.2 ≈ 16.67 years  
  
These results indicate that Korea’s per capita GDP doubles more than twice as fast as France’s.

# GDP Projection for 2045

To estimate the 2045 GDP, we apply the exponential growth formula:  
  
Future GDP = Initial GDP × (1 + r)^t  
  
where r is the annual growth rate and t = 42 years (from 2003 to 2045).  
  
France:  
28,900 × (1 + 0.019)^42 ≈ 28,900 × 2.149 ≈ $62,096.10  
  
Korea:  
12,700 × (1 + 0.042)^42 ≈ 12,700 × 5.188 ≈ $65,887.60

# Summary Table

|  |  |  |
| --- | --- | --- |
| Country | Doubling Time (Years) | Projected 2045 Per Capita GDP (USD) |
| France | 36.84 | $62,096.10 |
| Korea | 16.67 | $65,887.60 |

# Conclusion

Despite France's higher starting GDP in 2003, Korea’s significantly faster growth rate enables it to surpass France in per capita GDP by 2045. This demonstrates the substantial impact of compounding growth over time and highlights the importance of growth rates in long-term economic planning and forecasting.

# References

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Investopedia. (n.d.). Rule of 70. In Investopedia. Retrieved May 24, 2025, from https://www.investopedia.com/terms/r/rule-of-70.asp