What Business Cycles Cost Us

Part 2

\[ U = \log(\tilde{c}_1) + \gamma \log(\tilde{c}_2) + \gamma^2 \log(\tilde{c}_3) + \ldots \]

The Immortal Consumer

\[ U = \log(\tilde{c}_1) + \gamma \log(\tilde{c}_2) + \gamma^2 \log(\tilde{c}_3) + \ldots \]

Two Changes

\[ c \text{ is uncertain, the weights are declining} \]

\[ U = \log(\tilde{c}_1) + \gamma \log(\tilde{c}_2) + \gamma^2 \log(\tilde{c}_3) + \ldots \]

U is uncertain, but we can compute expected utility

\[ E(U) = E[\log(\tilde{c}_1)] + \gamma E[\log(\tilde{c}_2)] + \gamma^2 E[\log(\tilde{c}_3)] + \ldots \]

Suppose we could avoid business cycles

Let's call that \( U_{\text{now}} \)
Suppose we could avoid business cycles.

Expected Utility

\[
E(U) = \log(c_1^*) + \gamma \log(c_2^*) + \gamma^2 \log(c_3^*) + \ldots
\]

Let's call that \( U_{\text{no-cycle}} \).

The Question

\( U_{\text{now}} < U_{\text{no-cycle}} \)

- How much of an increase in consumption?

How Big an Increase

\[
E(U) = E[\log((1 + \lambda \tilde{c}_1)] + \gamma E[(1 + \lambda \tilde{c}_2)] + \\
\gamma^2 E[((1 + \lambda \tilde{c}_3)] + \ldots
\]

Let's call that \( U_{\lambda} \).

Expected Utility

\[
E(U) = E[\log((1 + \lambda \tilde{c}_1)] + \\
\gamma E[(1 + \lambda \tilde{c}_2)] + \ldots
\]
The Question

\[ U_{\text{now}} < U_{\text{no-cycle}} \]

• And, for some value of \( \lambda \)

\[ U_\lambda = U_{\text{no-cycle}} \]

This gives us the benefit from eliminating uncertainty

• And, for some value of \( \lambda \)

\[ U_\lambda = U_{\text{no-cycle}} \]

The Answer

\[ \lambda \cong 0.015 \]

Eliminating business cycles is worth as much as a 1.5% increase in consumption.

Since \( C \) runs about $7,000 billion per year, this is equal to about $105 billion per year.