Econometrics 1 *Applied Econometrics with R*

Assignment 1

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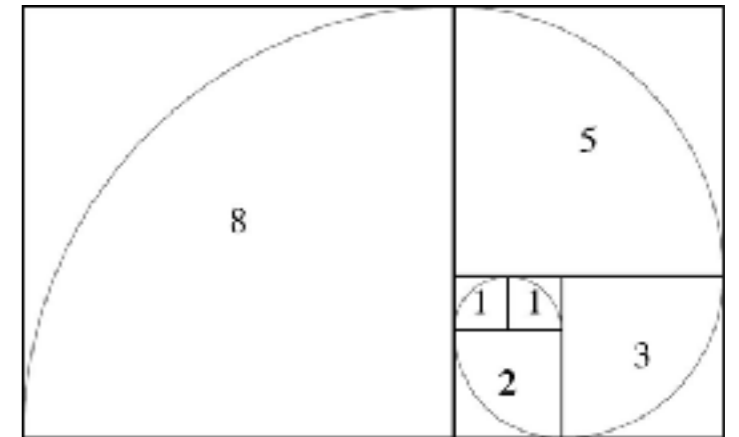Tel: (0755) 2695 0548

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Assignment 1

- The Fibonacci sequence (or Fibonacci numbers) is

  1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, …

  or mathematically

  $$F_n = F_{n-1} + F_{n-2} \text{ with } F_2 = F_1 = 1$$

- Write two functions `fib1` and `fib2` that return the Fibonacci number F_n for input n. Use recursion in `fib1` and do NOT use recursion in `fib2`. Print both functions in an A4 paper. Use a fixed-width font and take care of the readability of your codes (indentation, comments, etc.).

- **Due date**: hand in at the beginning of the class on Oct 23, 2017.

Assignment 1: hint

- You can find explicit formulas of the Fibonacci numbers from https://en.wikipedia.org/wiki/Fibonacci_number

- For example

$$F_n = \sum_{k=0}^{\left\lfloor \frac{n-1}{2} \right\rfloor} \binom{n-k-1}{k}$$

where the floor function $\lfloor \, \rfloor$ can be calculated with `floor( )`, and the binomial coefficient can be calculated with `choose( , )`.