Gollin's Nobody's Business but my own

Lucas (1978) with self employment

> Gollin, Douglas. 2008. “Nobody’s Business but My Own: Self-Employment and Small Enterprise in Economic Development.” *Journal of Monetary Economics* 55 (2): 219–33.

$$y = xA_i[f(n,k)]^\theta$$

The self employed:

$$y = xA_{SE}\, f(n,k)^\theta$$

Assume if self employed need to devote fraction α of labor to management, so have $(1-\alpha)$ left to 'sell' to labor market (or own enterprise) at market wage w.

$$\pi^{SE}(x) = \max_{n,k} xA_{SE}\, f(n,k)^\theta - rk + w(\alpha - n)$$

$$0 \leq n \leq \alpha < 1$$

If a full-time manager then:

$$\pi^{FT}(x) = \max_{n,k} xA\, f(n,k)^\theta - rk + wn$$

Occupational choice problem:

$$\pi(x) = max(w, \pi^{SE}(x), \pi^{FT}(x))$$

JC note: Although self-employed have higher TFP they also face the constraint of only being able to devote fraction α of their time. Presumably this reflects some sort of constraint (e.g. need to generate cash on wage market to finance inputs into self-employment firm).

Does this mean that 'self-employed firms' never hire labor in addition to their own? Not clear in this model..

Expected partition according to x

> “ there will be two cutoff levels of entrepreneurial ability z_1 and z_2 such that everyone with a skill level below z_1 will work, and everyone with a skill level above z_2 will be a full-time manager, while individuals with intermediate levels of entrepreneurial ability (i.e. $x \in (z_1, z_2)$ will be self-employed. For some parameter values, there may be no self-employed people in the economy.

Model assumptions

Gollin's model is 'dynamic' (one steady state compared to another) and uses a CES form.

The distribution of ability is assumed to be a beta distribution with a=b=18

Parameter A is first normalized to 1 and A_{SE} calibrated to 1.31. This suggestss that (p227) 'self-employed people use only 40 percent of their work time to perform physical production (e.g. sewing..) but are about one-third more productive in terms of TFP than firms of comparable size operated by full time managers...the productivity of small and micro firms is higher than that of larger firms'.

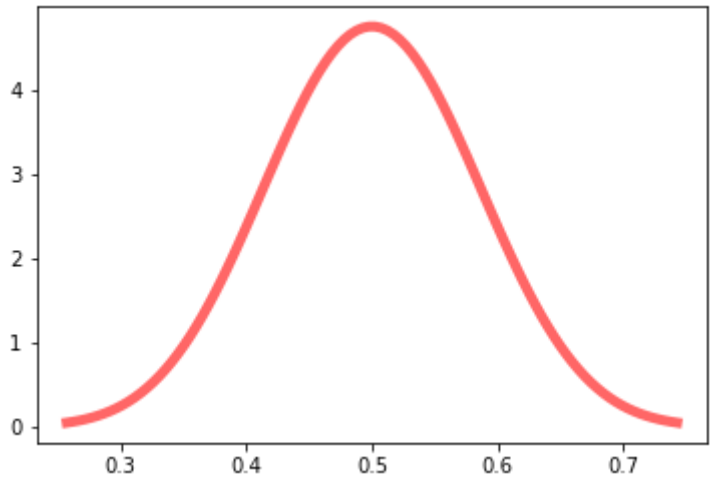
[11]
```
from scipy.stats import beta
import matplotlib.pyplot as plt
import numpy as np
```

[12]
```
a = b = 18
```

[13]
```
beta.stats(a, b)
```

```
(array(0.5), array(0.006756756756756756))
```

[10]
```
x = np.linspace(beta.ppf(0.001, a, b), beta.ppf(0.999, a, b), 100)
plt.plot(x, beta.pdf(x, a, b),'r-', lw=5, alpha=0.6, label='beta pdf');
```



[ ]