Updates:
Region characteristics of patent citations

Ashwin Iyenggar (1521001)

ashwin.iyenggar15@iimb.ernet.in

January 14, 2017

1 Linear Regression

```
reg lncit_recd_total lncit_made_localinternal lncit_made_localexternal
    lncit_made_nonlocalinternal lncit_made_nonlocalexternal
    lncit_made_other lnpatents lnpool d2002-d2012 if (year>=2001 & year
    <=2012)
```

The results are in Table 1

2   Negative Binomial Regression on All Data

```
xtnbreg cit_recd_total lncit_made_localinternal lncit_made_localexternal
    lncit_made_nonlocalinternal lncit_made_nonlocalexternal
    lncit_made_other lnpatents lnpool d2002-d2012 if (year>=2001 & year
    <=2012), i(regionid) fe

note: 13214 groups (13214 obs) dropped because of only one obs per group
note: 8390 groups (24742 obs) dropped because of all zero outcomes

initial values not feasible
```

Table 1: Linear Regression Results

Linear Regression

VARIABLES	(1) Log(Total Citations Received)
Log(Cit[Same Region, Same Assignee])	0.1178***
	(0.0096)
Log(Cit[Same Region, Different Assignee])	0.1600***
	(0.0084)
Log(Cit[Different Region, Same Assignee])	0.0565***
	(0.0052)
Log(Cit[Different Region, Different Assignee])	0.0177***
	(0.0027)
Log(Cit[Other])	-0.1010***
	(0.0028)
Log (Num Patents)	0.9053***
	(0.0034)
Log (Patent Pool Size)	0.0315***
	(0.0021)
d2002	-0.0591***
	(0.0123)
d2003	-0.1308***
	(0.0124)
d2004	-0.2346***
	(0.0124)
d2005	-0.3988***
	(0.0124)
d2006	-0.5076***
	(0.0124)
d2007	-0.6781***
	(0.0123)
d2008	-0.8623***
	(0.0123)
d2009	-0.9980***
	(0.0124)
d2010	-1.1608***
	(0.0125)
d2011	-1.3260***
	(0.0125)
d2012	-1.4510***
	(0.0126)
Constant	0.9497***
	(0.0097)
Observations	189,037
R^2	0.6209

3   Negative Binomial Regression with Average Citations > 50

```
local cutoff 50
xtnbreg cit_recd_total lncit_made_localinternal lncit_made_localexternal
    lncit_made_nonlocalinternal lncit_made_nonlocalexternal
    lncit_made_other lnpatents lnpool d2002-d2012 if (year>=2001 & year
    <=2012 & mean_patent_rate12 > 'cutoff'), i(regionid) fe
```

The results are in Table 2

Table 2: Effect of Geographic Distribution of Citations Made on Citations Received

	(1) Citations Received
Citations Received	
Log(Cit[Same Region, Same Assignee])	-0.00995
	(-1.63)
Log(Cit[Same Region, Different Assignee])	-0.0106
	(-1.95)
Log(Cit[Different Region, Same Assignee])	0.00240
	(0.45)
Log(Cit[Different Region, Different Assignee])	0.0192***
	(4.33)
Log(Cit[Other])	-0.00495
	(-0.96)
Log (Num Patents)	0.811***
	(43.94)
Log (Patent Pool Size)	-0.0730***
	(-4.28)
d2002	-0.0751***
	(-5.62)
d2003	-0.196***
	(-12.71)
d2004	-0.315***
	(-17.56)
d2005	-0.471***
	(-22.83)
d2006	-0.626***
	(-26.97)

d2007	-0.784***
	(-30.68)
d2008	-1.023***
	(-36.32)
d2009	-1.247***
	(-40.27)
d2010	-1.517***
	(-44.82)
d2011	-1.849***
	(-49.98)
d2012	-2.323***
	(-56.01)
Constant	-1.060***
	(-12.95)
Region Fixed Effects	Yes
N	6395

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$