



Comparison between actual F measure and the pseudo F measure in Synthetic datasets

Borja Calvo

Iñaki Inza

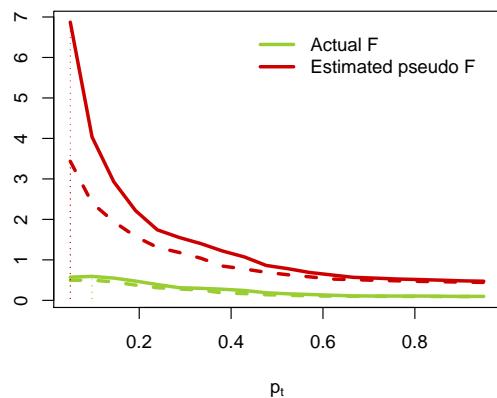
Pedro Larrañaga

Jose A. Lozano

1 Description

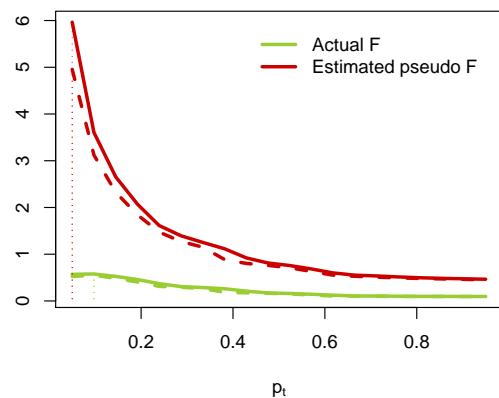
In this document are included all the plots comparing the actual F measure and the pseudo F. For each metric, there are two lines in the plots. The solid one represents the upper bound of the metric, i.e., the maximum value obtained for that metric in the fifty datasets generated (for that number of parents, actual p and cardinality of the positive examples). The dashed line represents the lower bound, i.e., the minimum value get for that metric in the fifty datasets. In the caption of the figures are indicated the maximum number of parents in Bayesian network that generated the data, the actual p in the model and the classifier for which the metrics have been computed. The subcaptions indicate the number of positive examples.

2 parents, 0.05 p, 100 pos., PNB



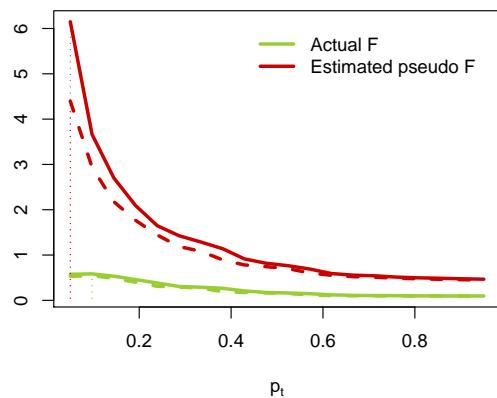
(a) 100

2 parents, 0.05 p, 1000 pos., PNB



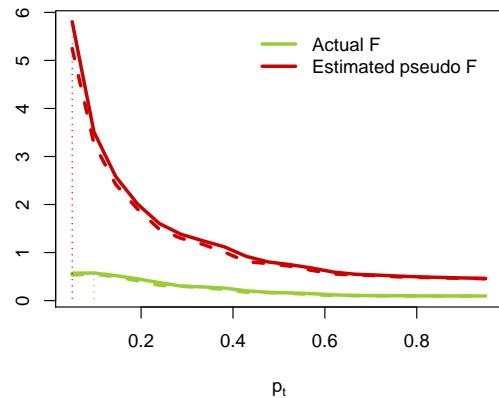
(b) 500

2 parents, 0.05 p, 500 pos., PNB



(c) 1000

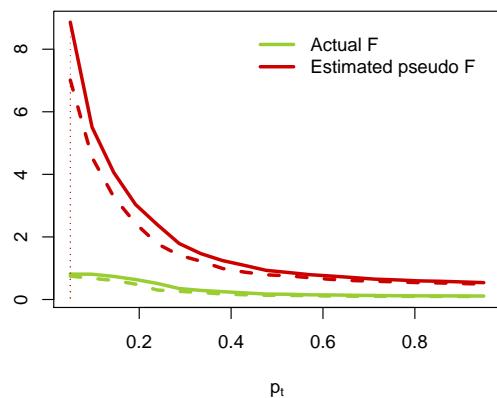
2 parents, 0.05 p, 5000 pos., PNB



(d) 5000

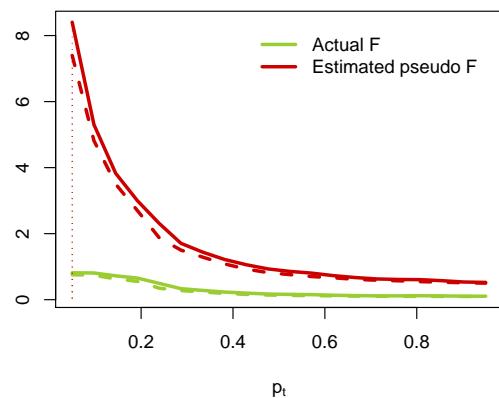
Figure 1: 2 parents, $p=0.05$, PNB

2 parents, 0.05 p, 100 pos., PTAN



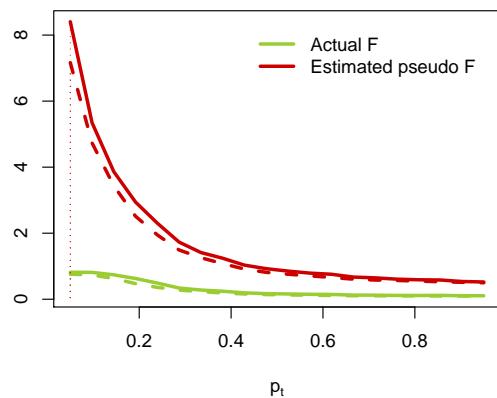
(a) 100

2 parents, 0.05 p, 1000 pos., PTAN



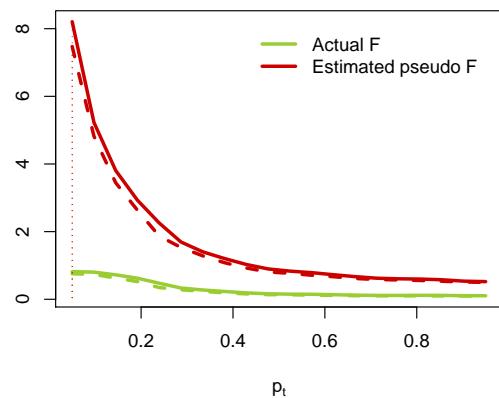
(b) 500

2 parents, 0.05 p, 500 pos., PTAN



(c) 1000

2 parents, 0.05 p, 5000 pos., PTAN



(d) 5000

Figure 2: 2 parents, $p=0.05$, PTAN

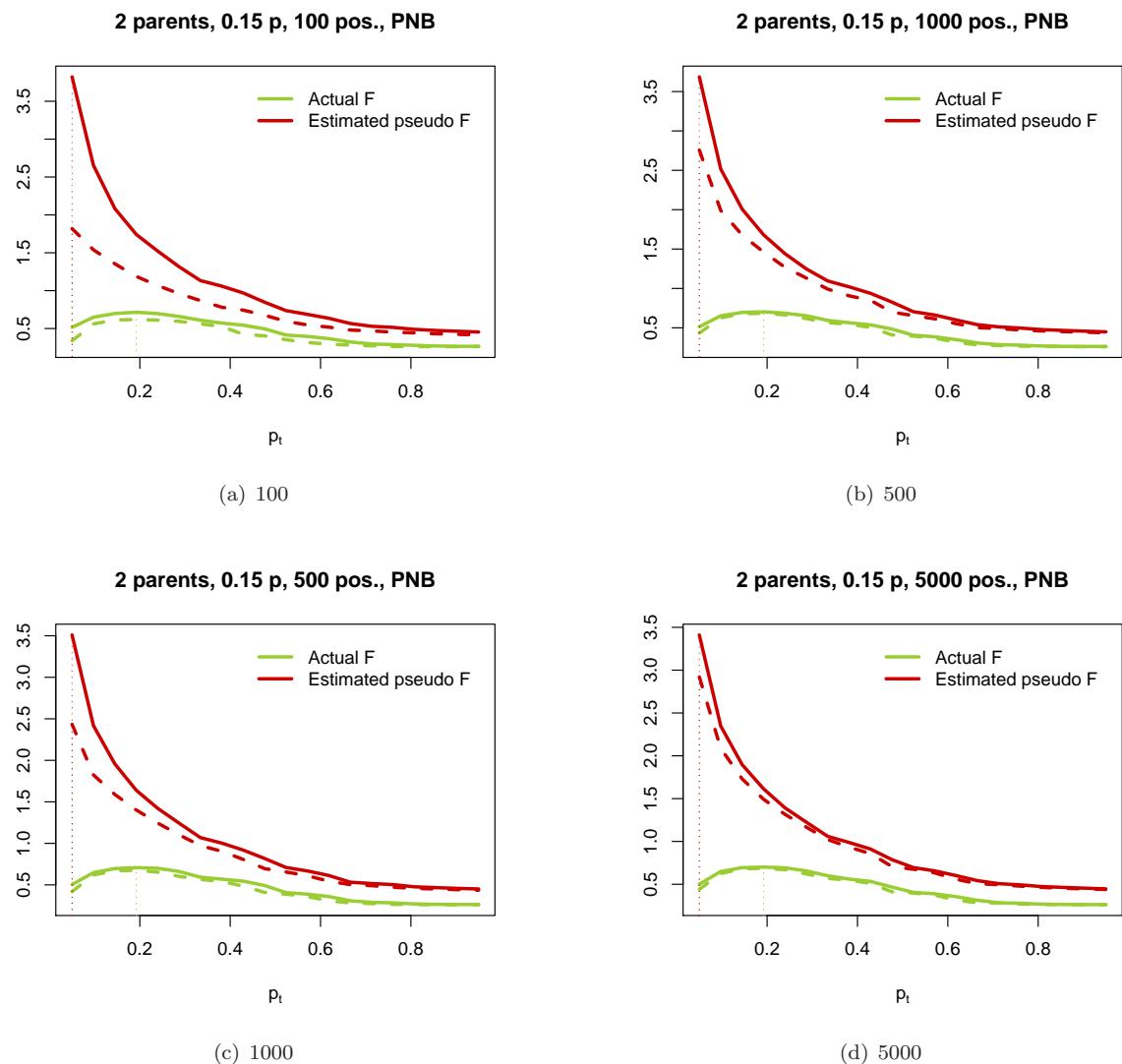
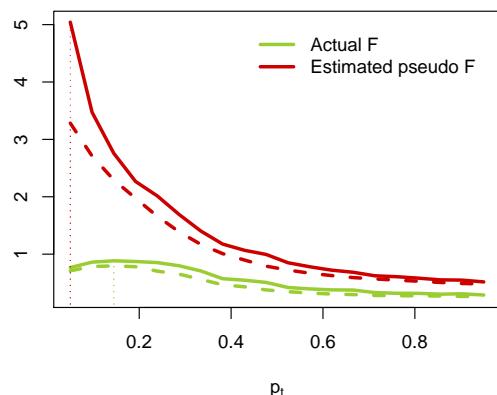


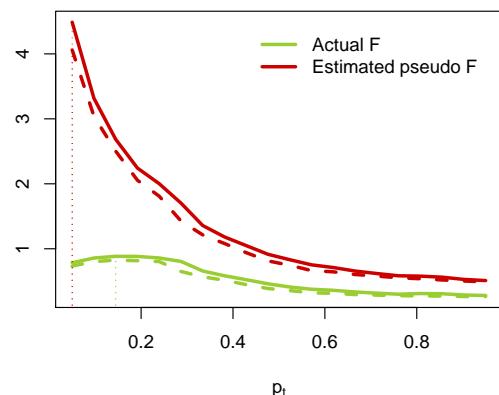
Figure 3: 2 parents, $p=0.15$, PNB

2 parents, 0.15 p, 100 pos., PTAN



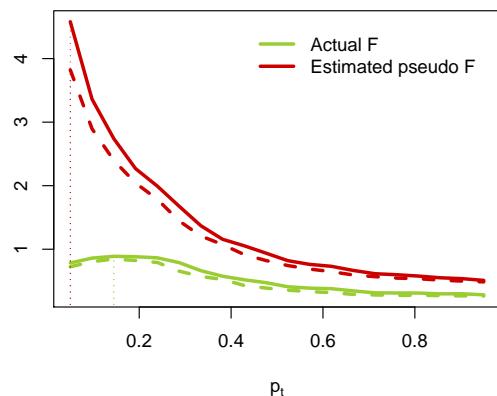
(a) 100

2 parents, 0.15 p, 1000 pos., PTAN



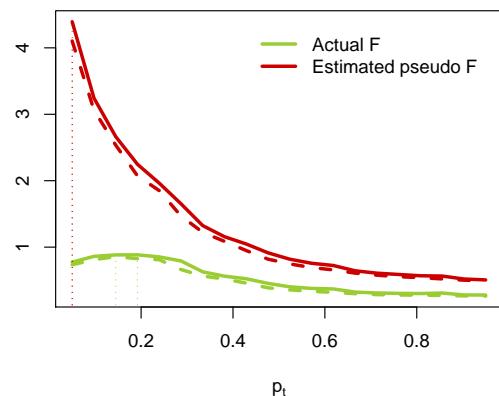
(b) 500

2 parents, 0.15 p, 500 pos., PTAN



(c) 1000

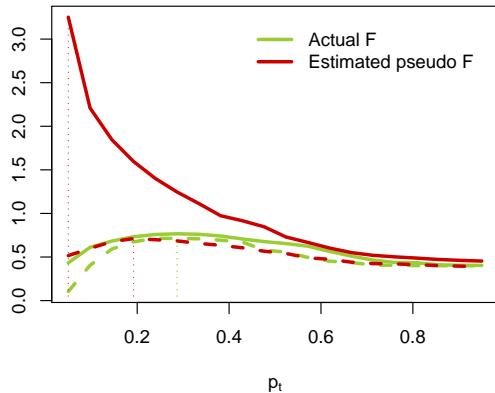
2 parents, 0.15 p, 5000 pos., PTAN



(d) 5000

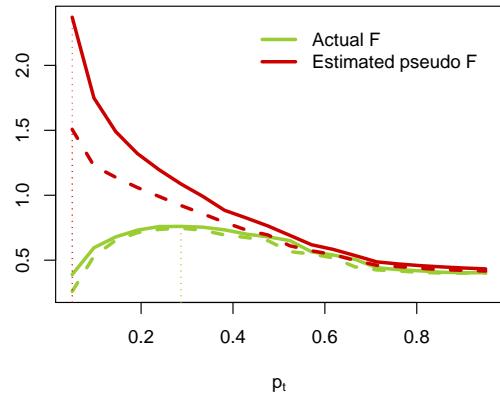
Figure 4: 2 parents, $p=0.15$, PTAN

2 parents, 0.25 p, 100 pos., PNB



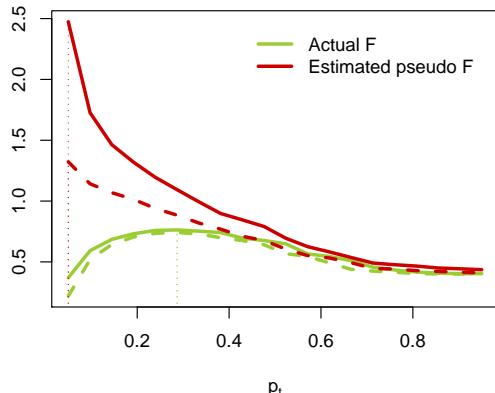
(a) 100

2 parents, 0.25 p, 1000 pos., PNB



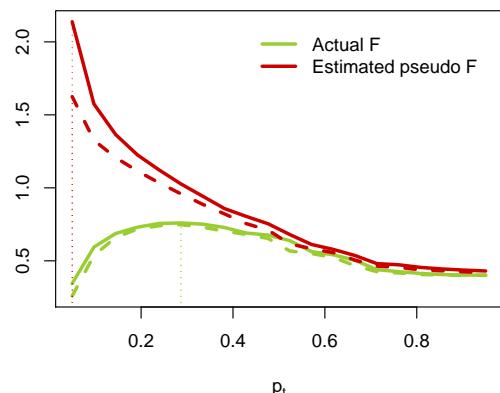
(b) 500

2 parents, 0.25 p, 500 pos., PNB



(c) 1000

2 parents, 0.25 p, 5000 pos., PNB



(d) 5000

Figure 5: 2 parents, $p=0.25$, PNB

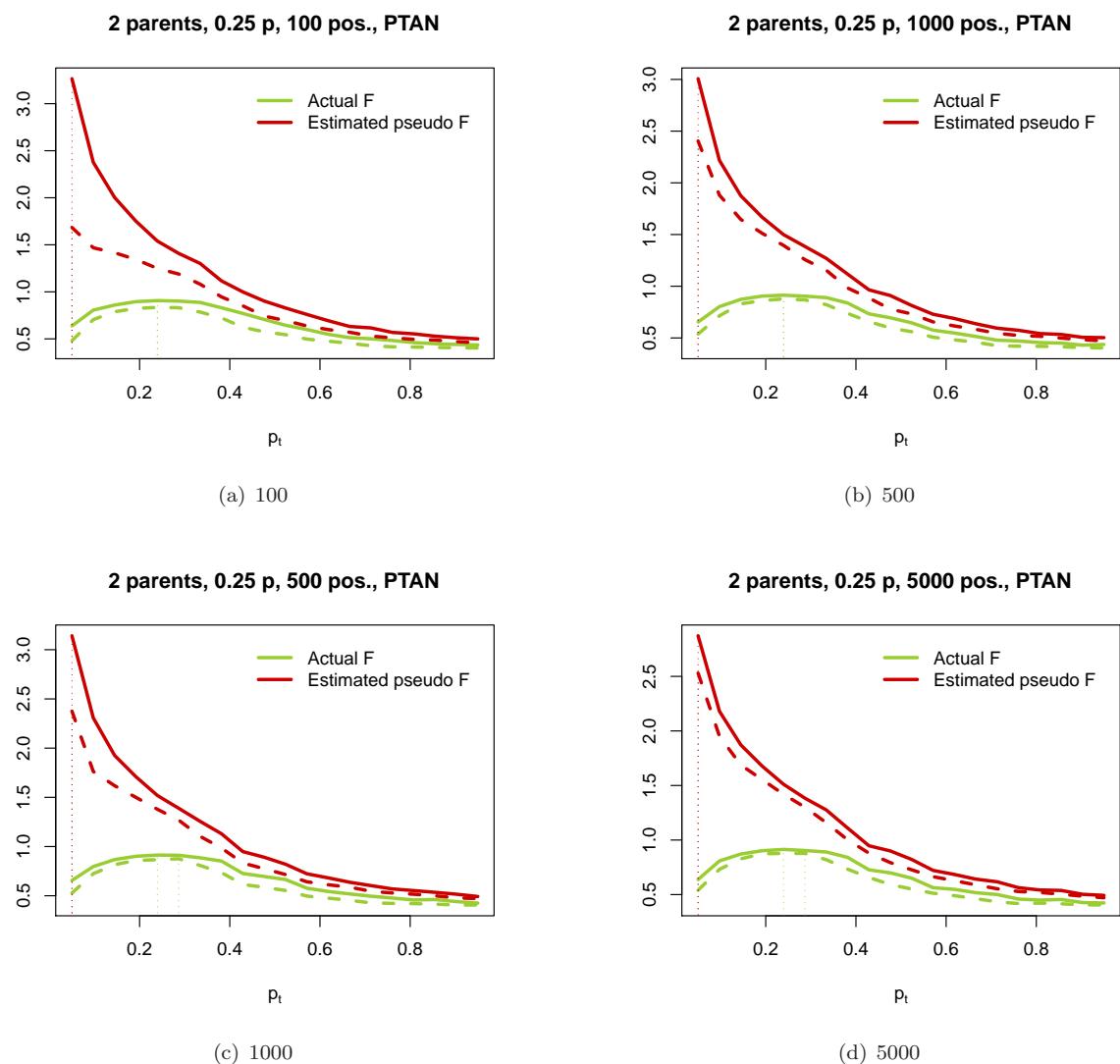


Figure 6: 2 parents, $p=0.25$, PTAN

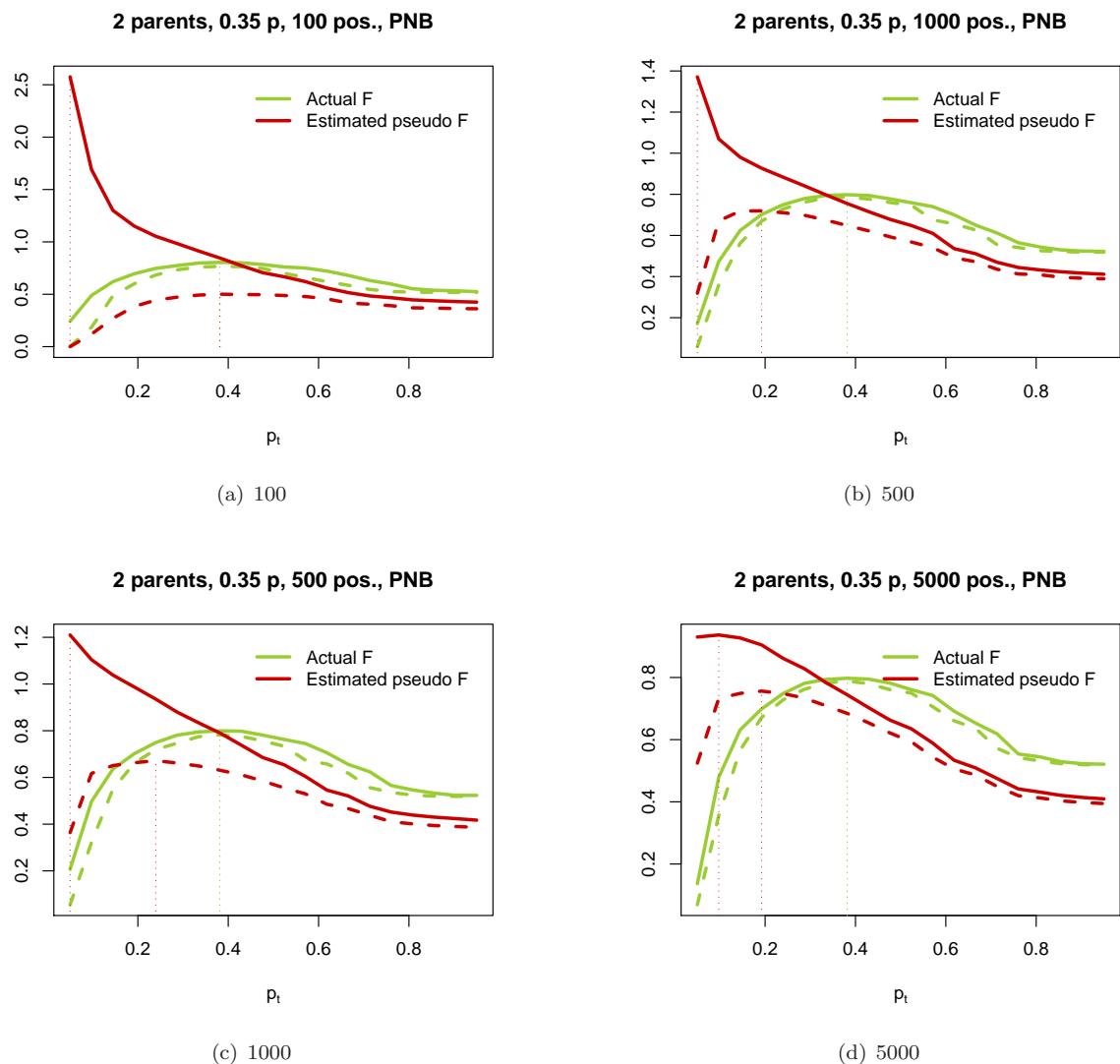
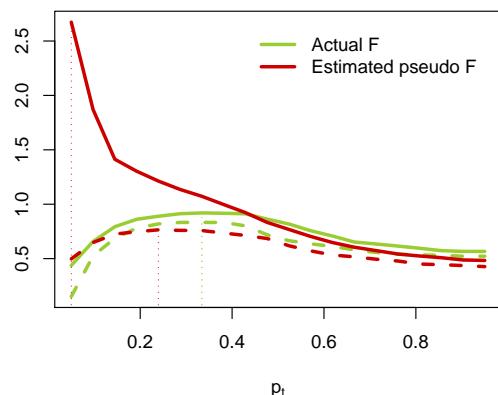


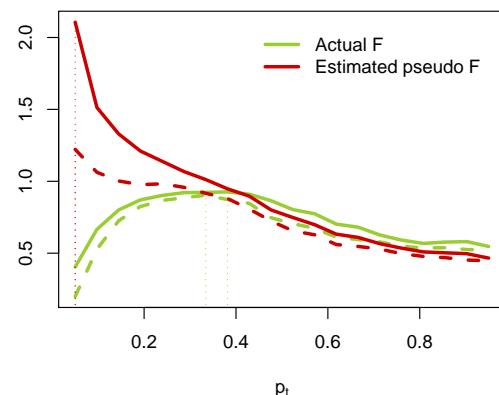
Figure 7: 2 parents, $p=0.35$, PNB

2 parents, 0.35 p, 100 pos., PTAN



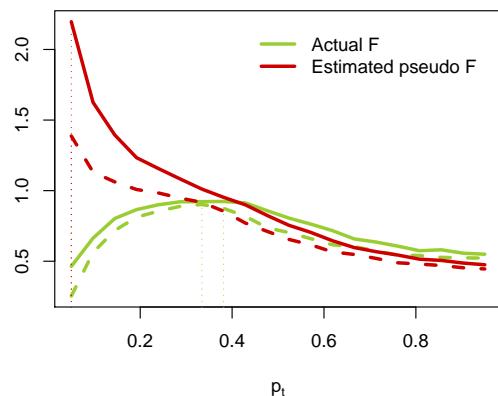
(a) 100

2 parents, 0.35 p, 1000 pos., PTAN



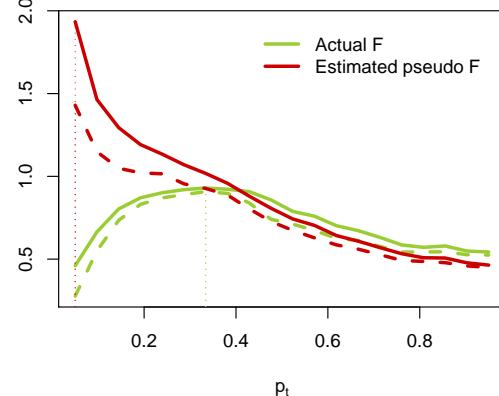
(b) 500

2 parents, 0.35 p, 500 pos., PTAN



(c) 1000

2 parents, 0.35 p, 5000 pos., PTAN



(d) 5000

Figure 8: 2 parents, $p=0.35$, PTAN

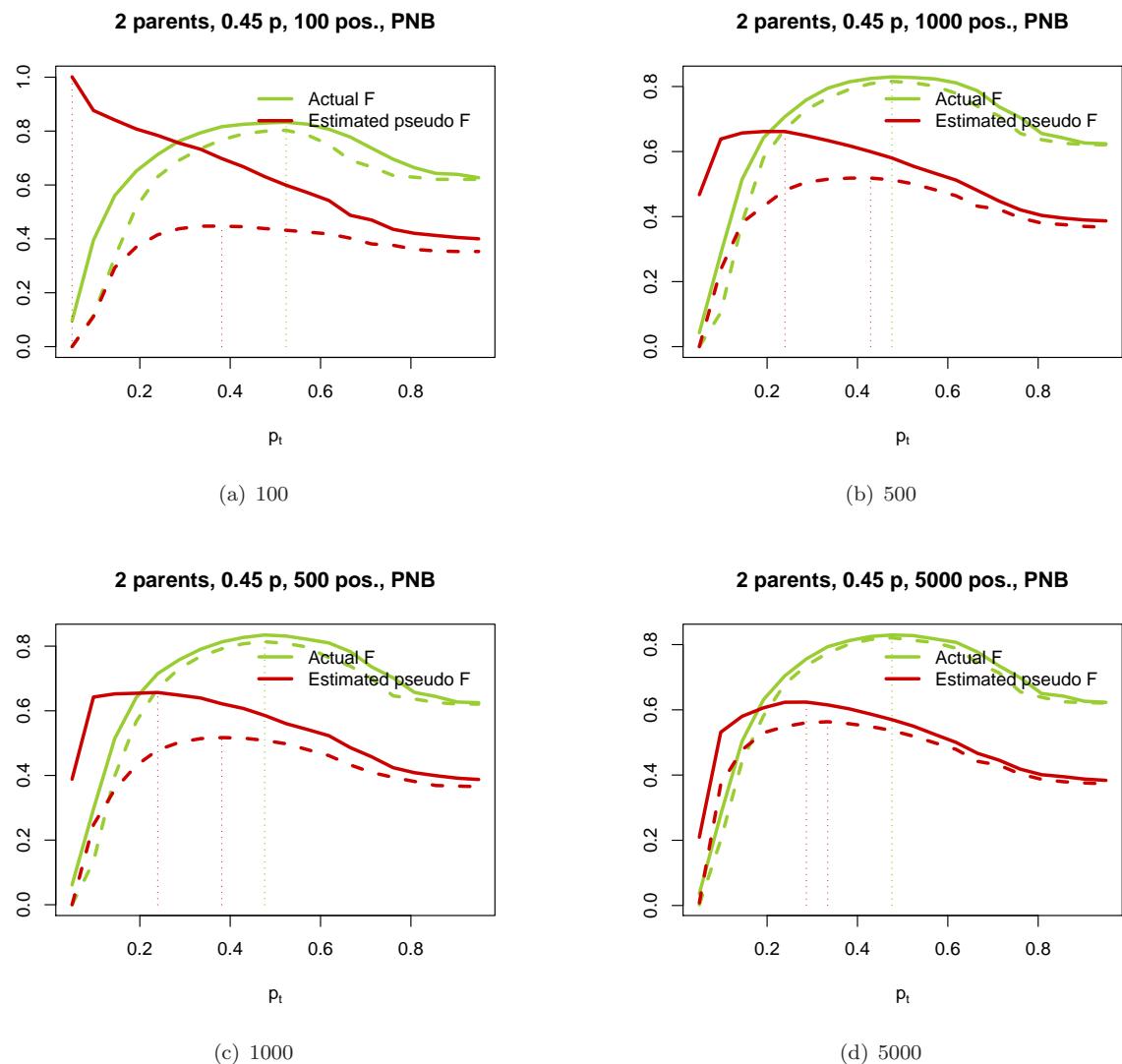


Figure 9: 2 parents, $p=0.45$, PNB

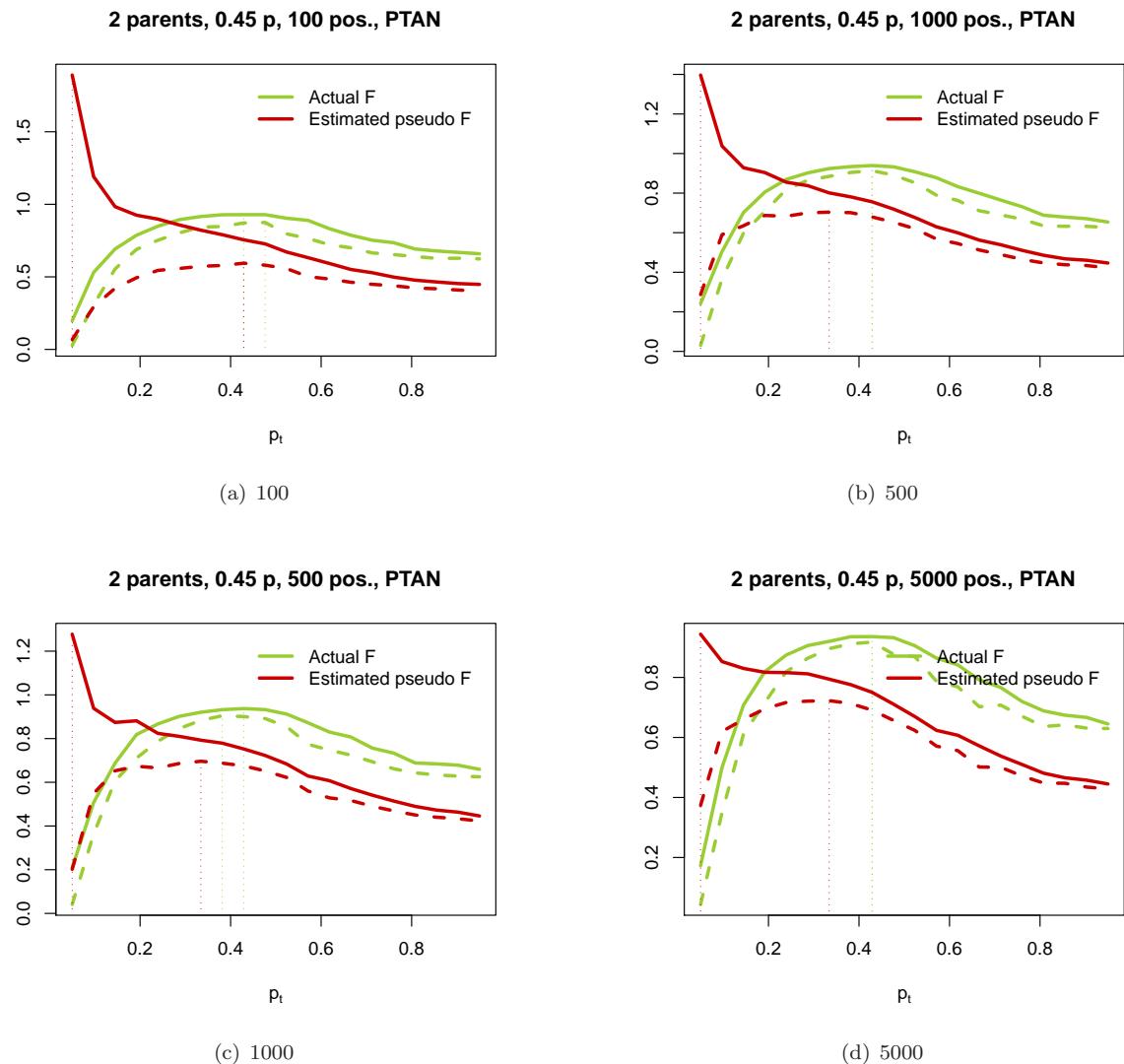


Figure 10: 2 parents, $p=0.45$, PTAN

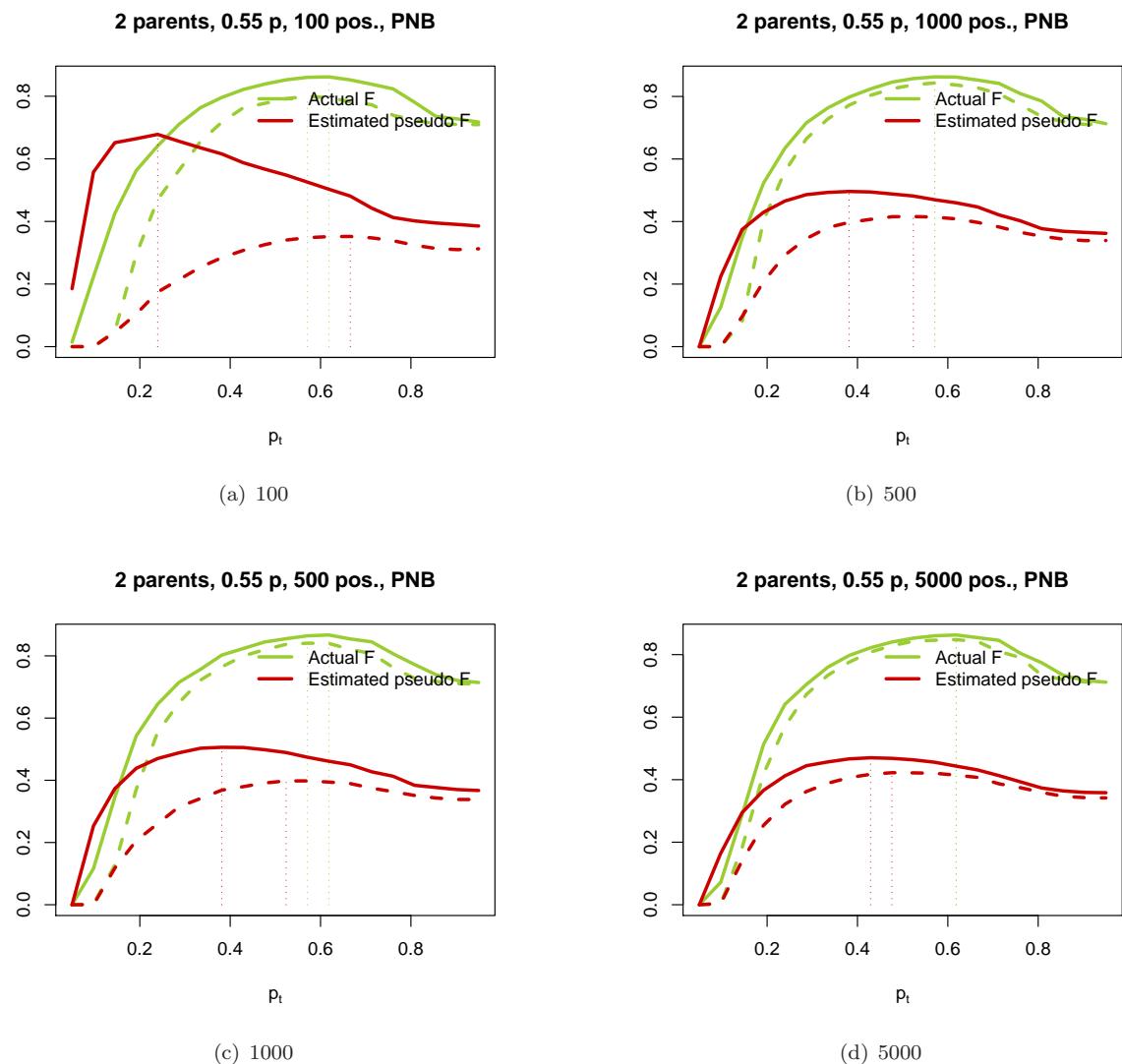
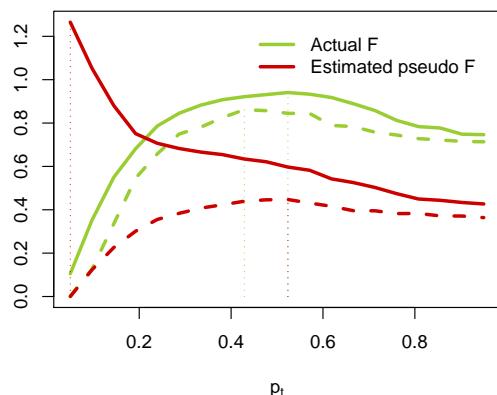


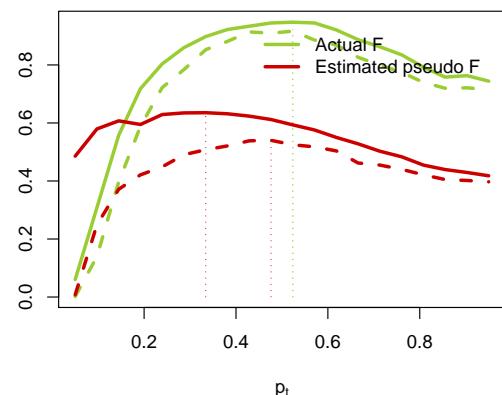
Figure 11: 2 parents, $p=0.55$, PNB

2 parents, 0.55 p, 100 pos., PTAN



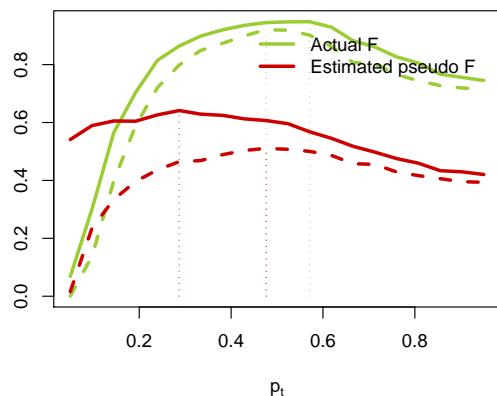
(a) 100

2 parents, 0.55 p, 1000 pos., PTAN



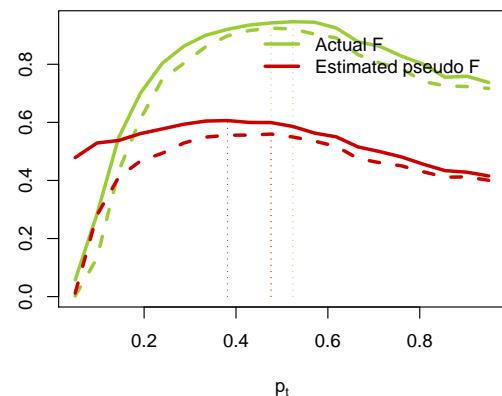
(b) 500

2 parents, 0.55 p, 500 pos., PTAN



(c) 1000

2 parents, 0.55 p, 5000 pos., PTAN



(d) 5000

Figure 12: 2 parents, $p=0.55$, PTAN

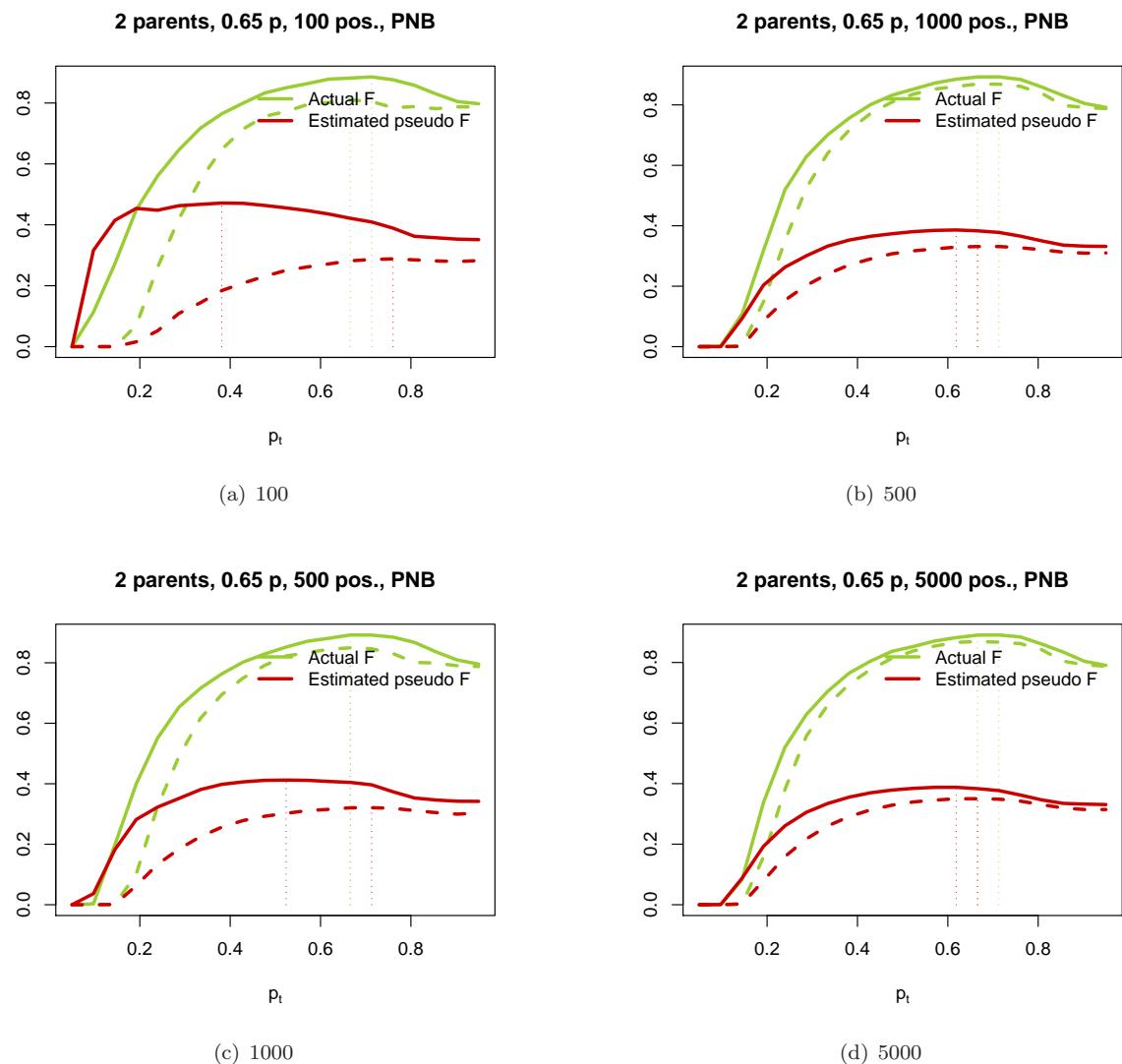


Figure 13: 2 parents, $p=0.65$, PNB

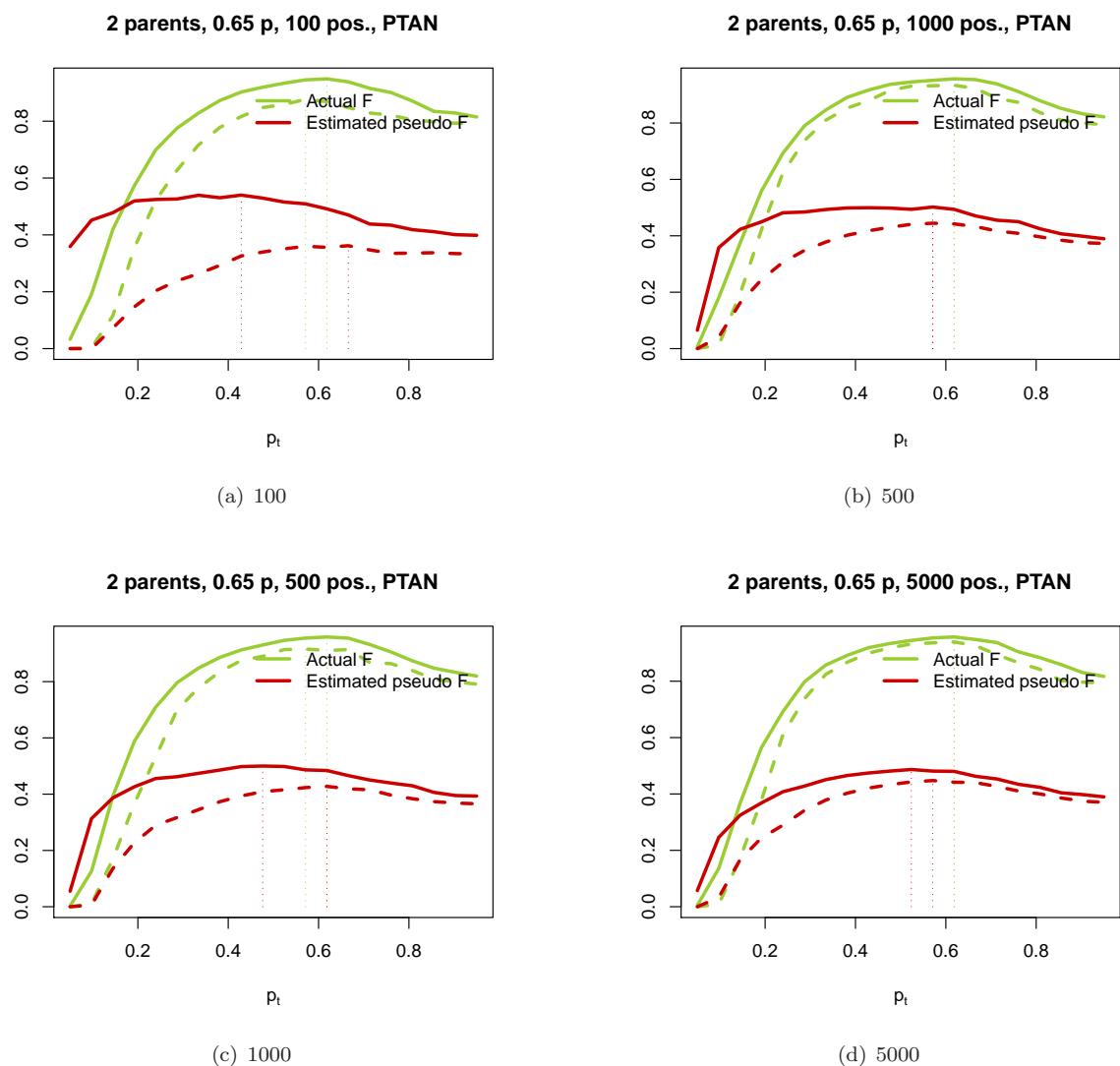


Figure 14: 2 parents, $p=0.65$, PTAN

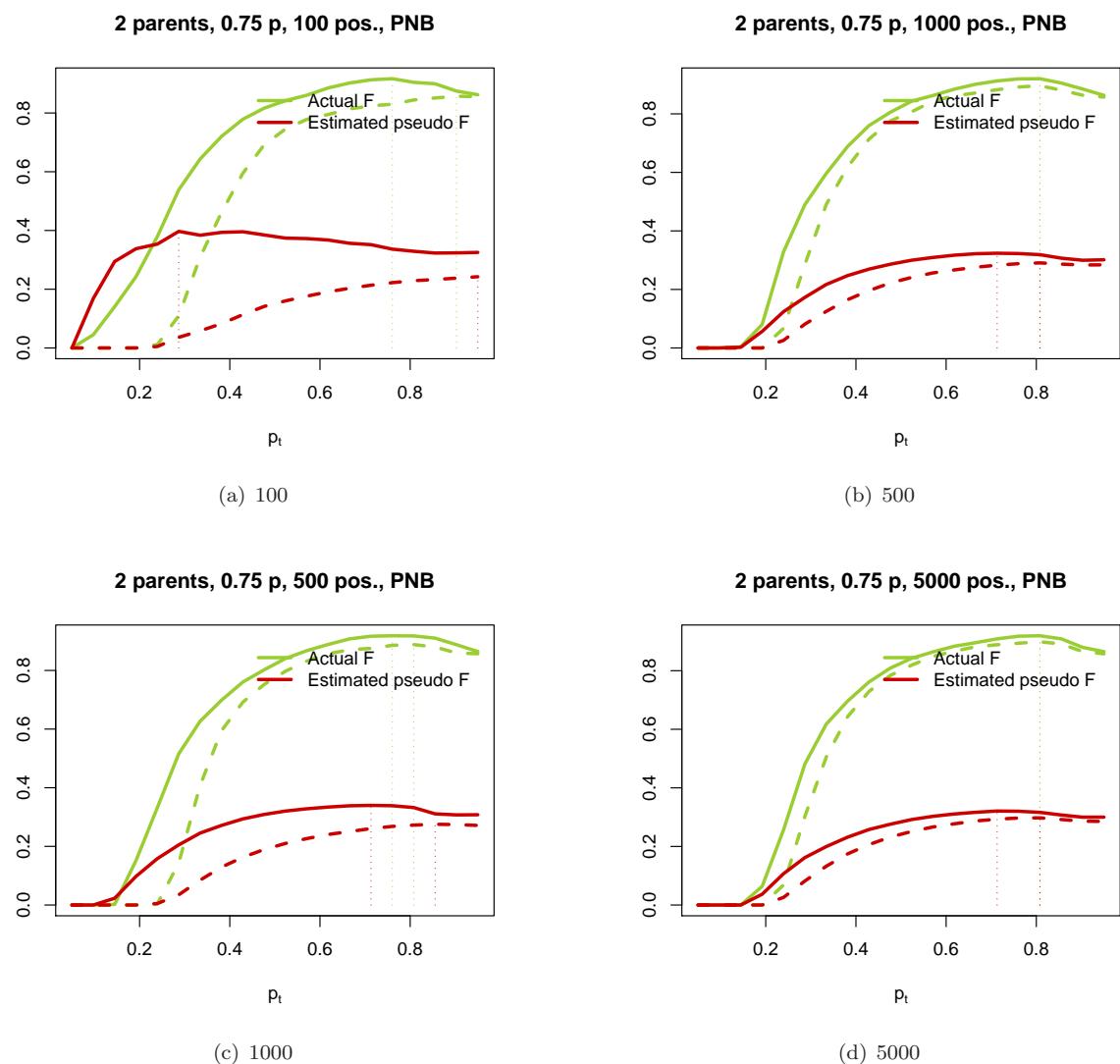


Figure 15: 2 parents, $p=0.75$, PNB

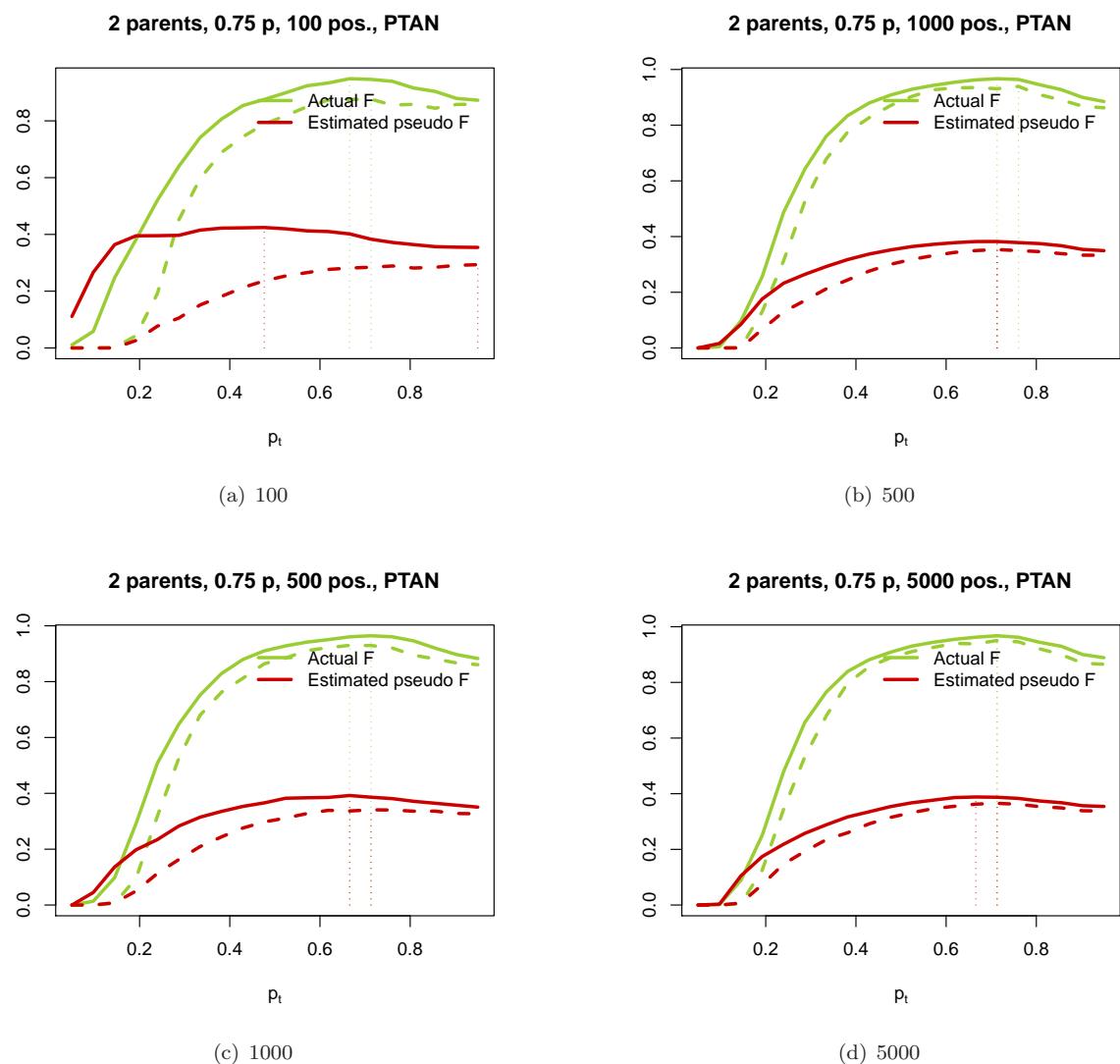


Figure 16: 2 parents, $p=0.75$, PTAN

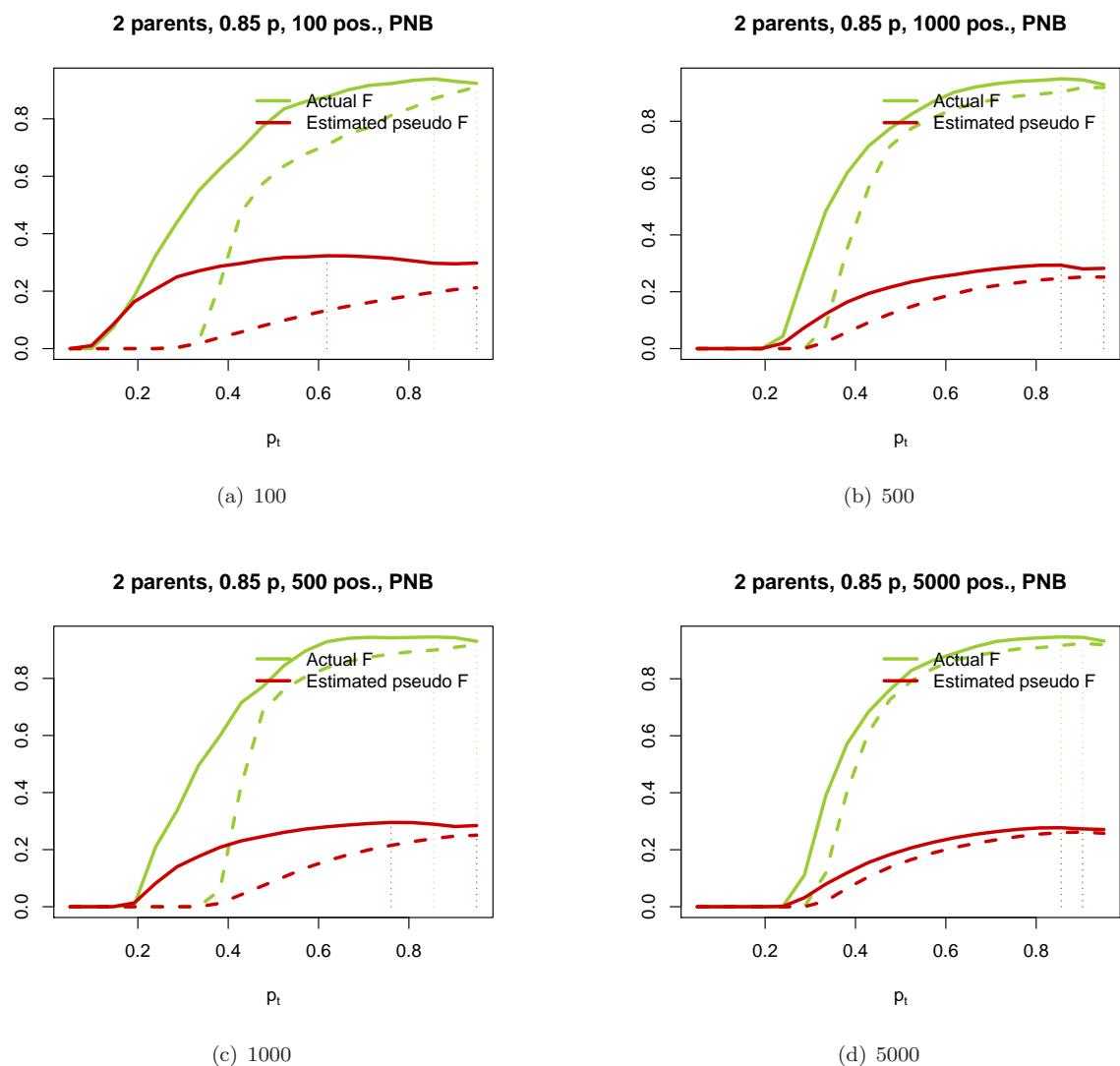


Figure 17: 2 parents, $p=0.85$, PNB

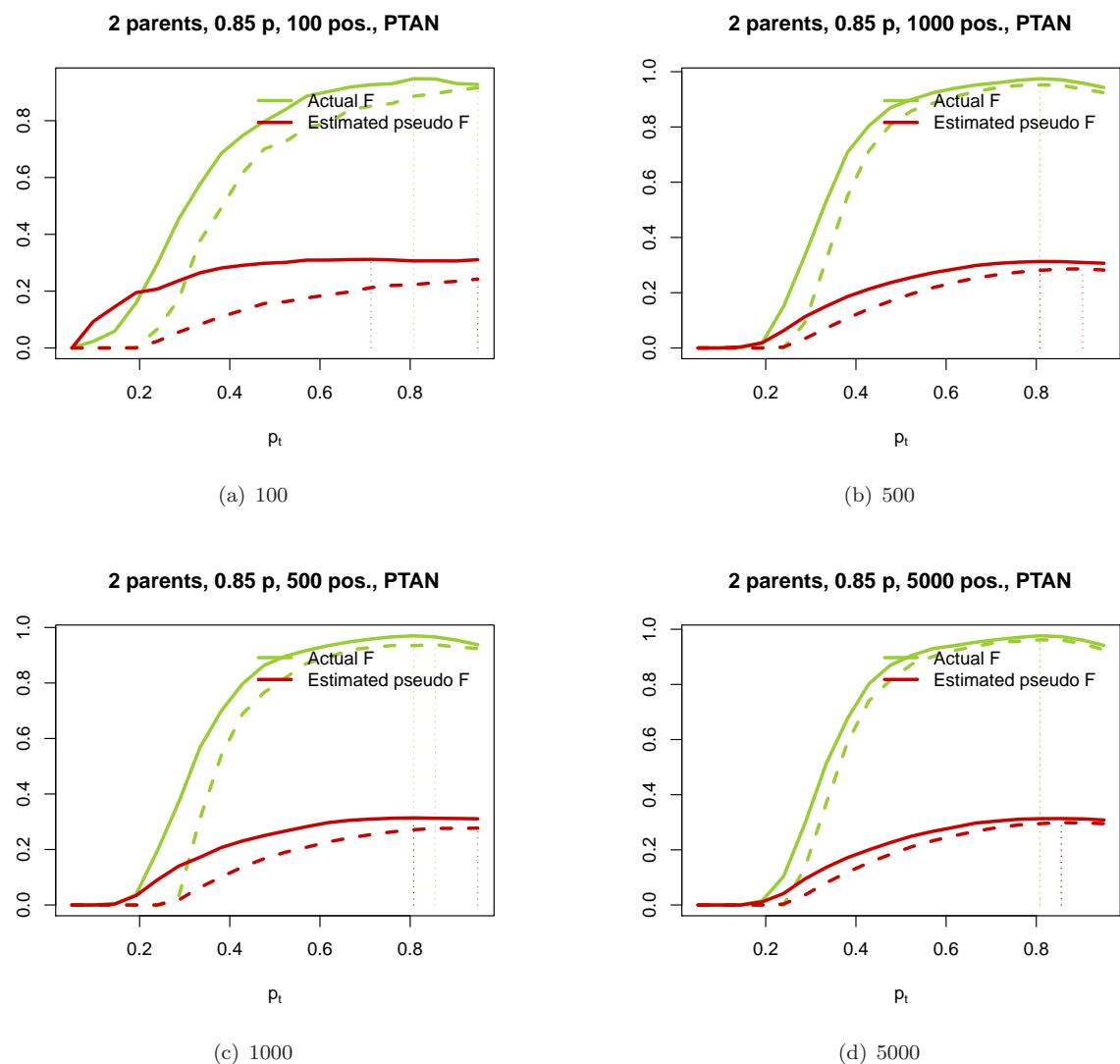


Figure 18: 2 parents, $p=0.85$, PTAN

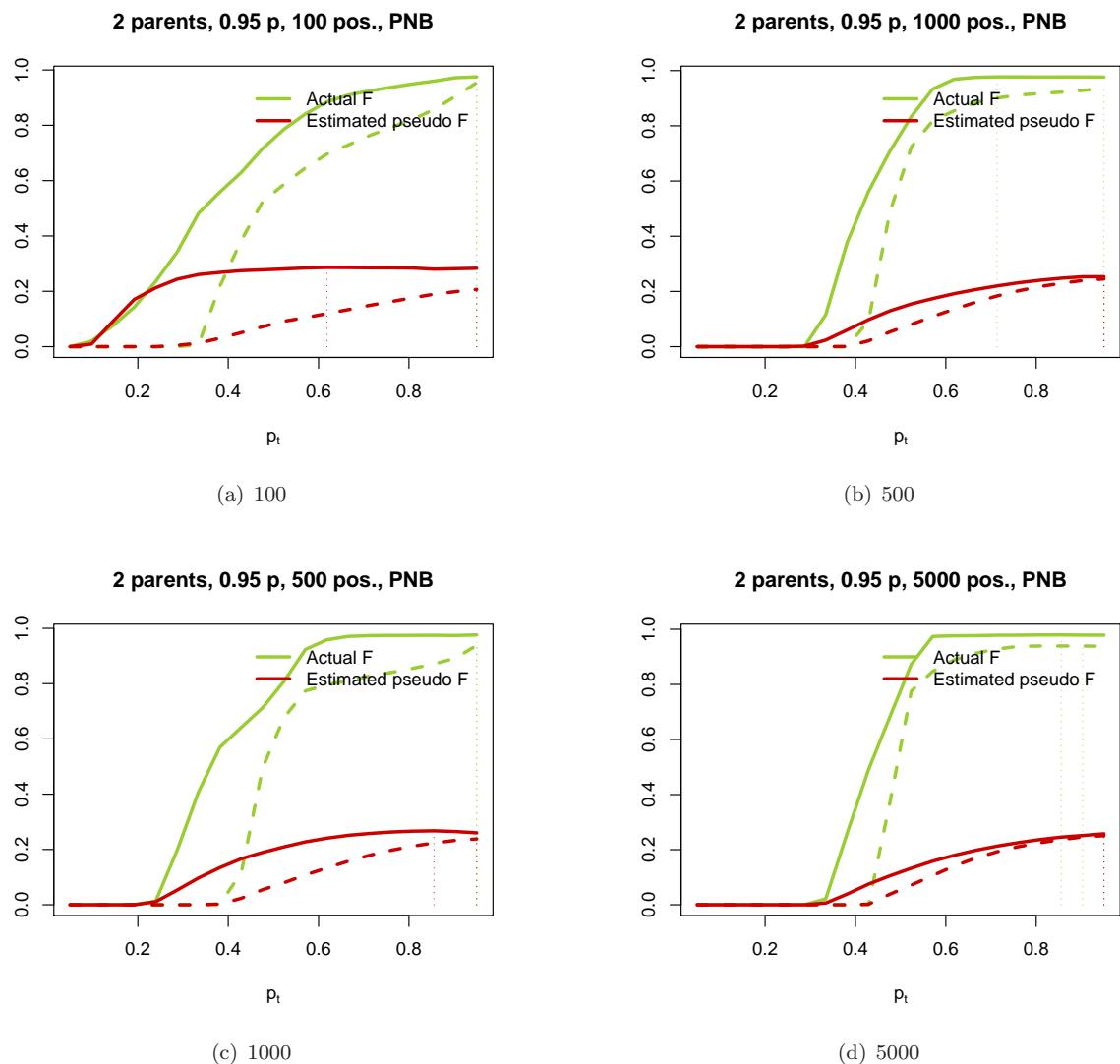


Figure 19: 2 parents, $p=0.95$, PNB

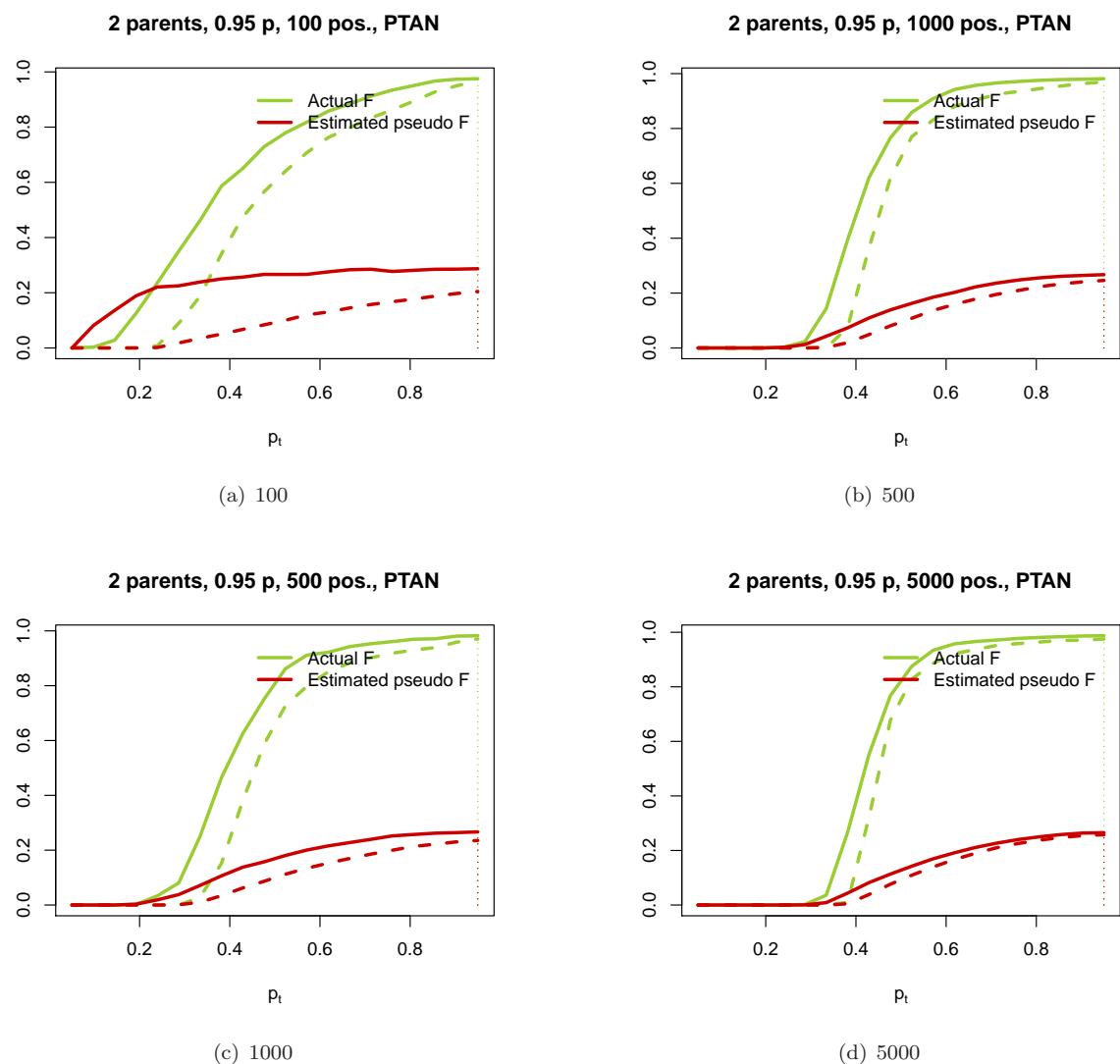
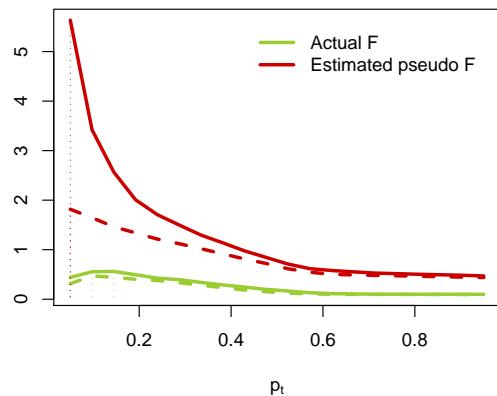


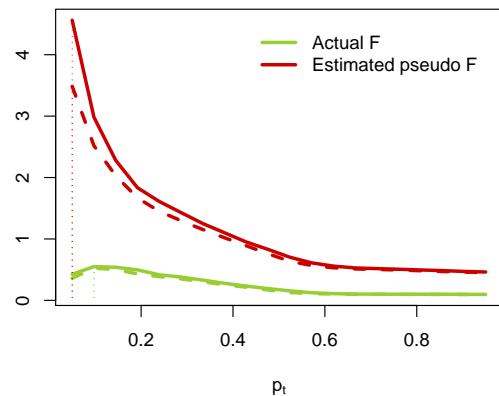
Figure 20: 2 parents, $p=0.95$, PTAN

3 parents, 0.05 p, 100 pos., PNB



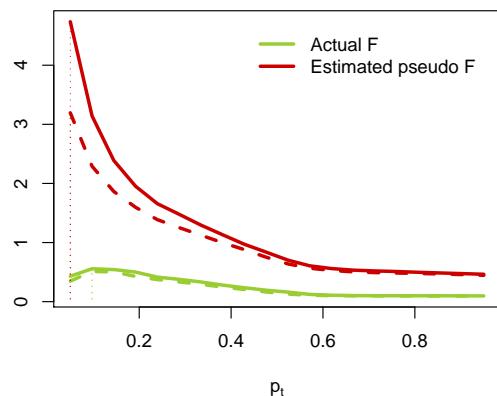
(a) 100

3 parents, 0.05 p, 1000 pos., PNB



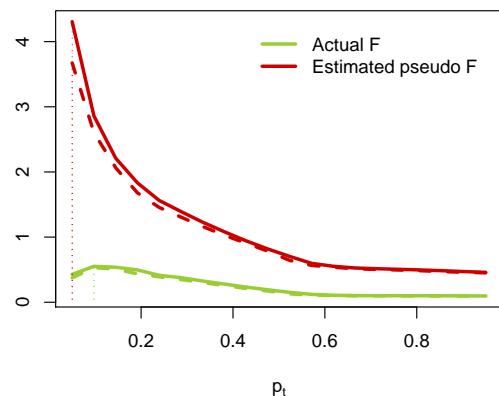
(b) 500

3 parents, 0.05 p, 500 pos., PNB



(c) 1000

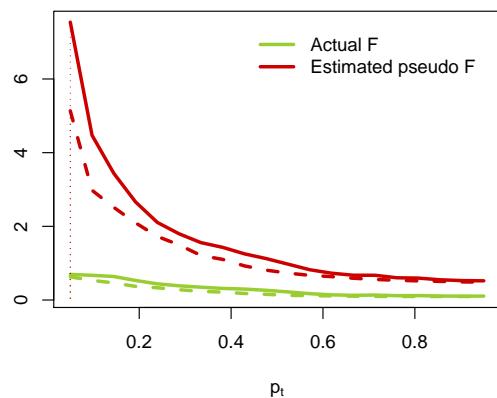
3 parents, 0.05 p, 5000 pos., PNB



(d) 5000

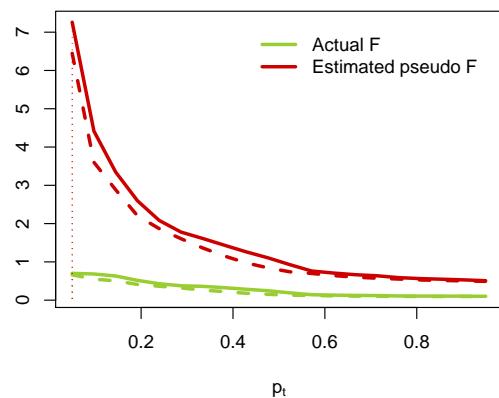
Figure 21: 3 parents, $p=0.05$, PNB

3 parents, 0.05 p, 100 pos., PTAN



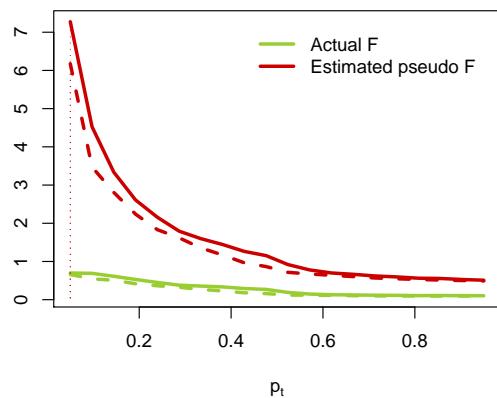
(a) 100

3 parents, 0.05 p, 1000 pos., PTAN



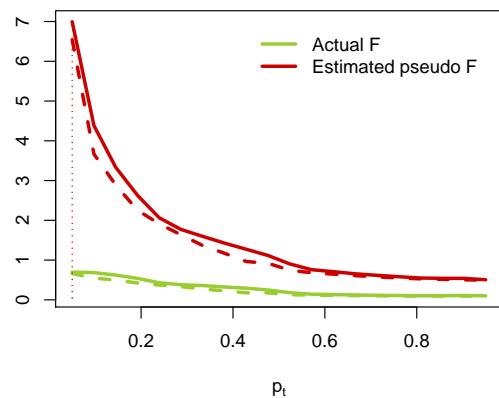
(b) 500

3 parents, 0.05 p, 500 pos., PTAN



(c) 1000

3 parents, 0.05 p, 5000 pos., PTAN



(d) 5000

Figure 22: 3 parents, $p=0.05$, PTAN

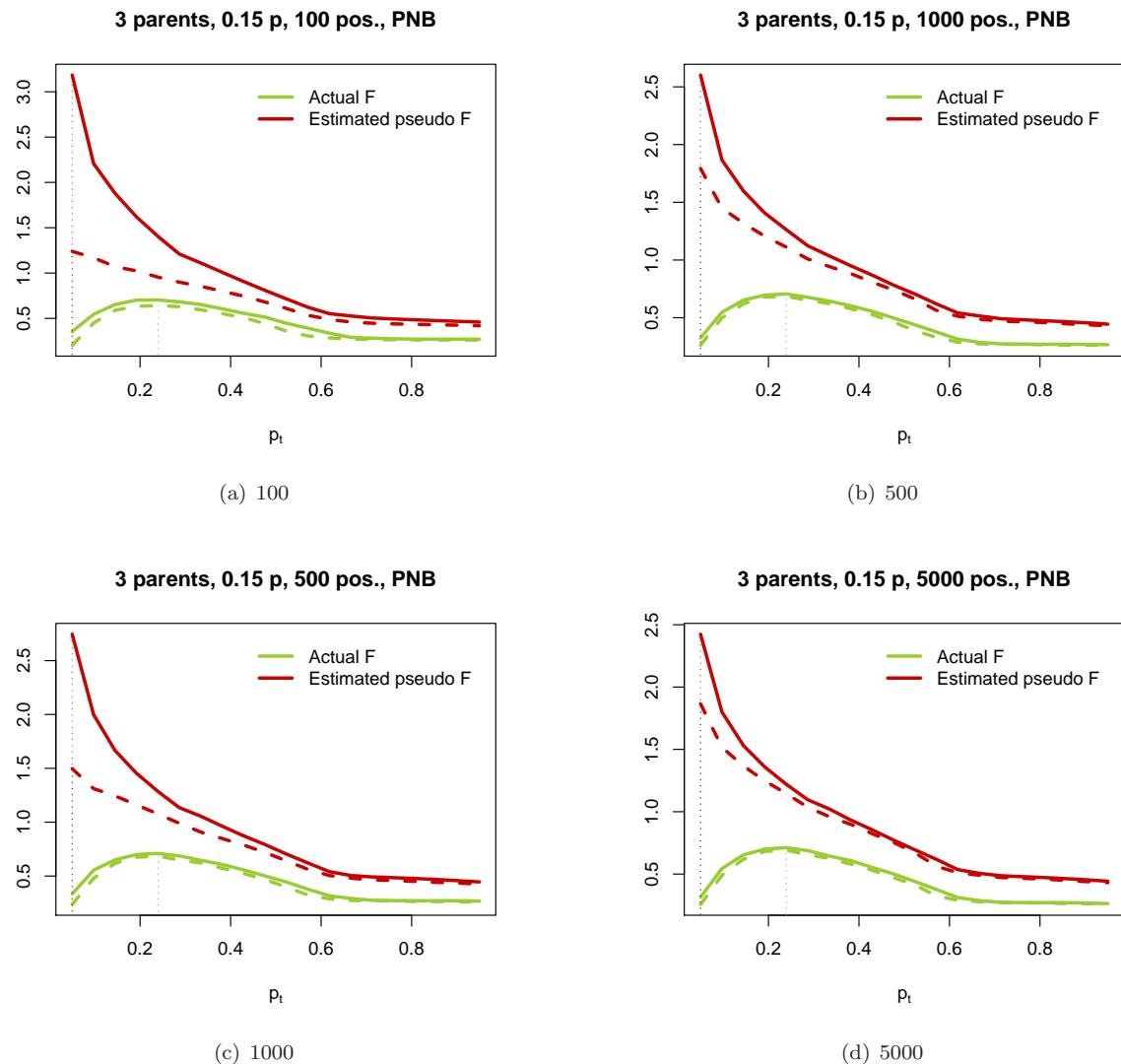
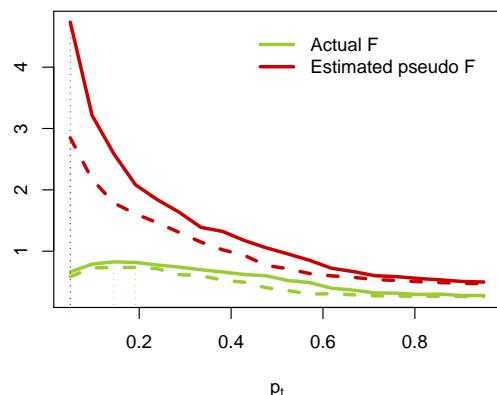


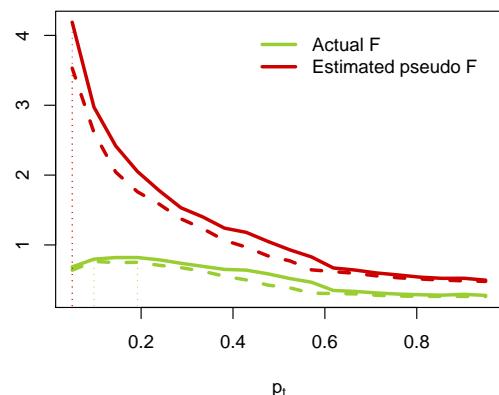
Figure 23: 3 parents, $p=0.15$, PNB

3 parents, 0.15 p, 100 pos., PTAN



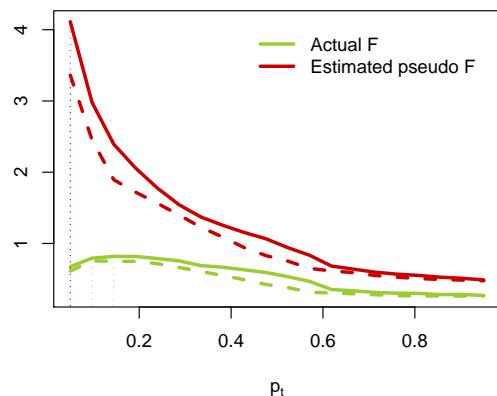
(a) 100

3 parents, 0.15 p, 1000 pos., PTAN



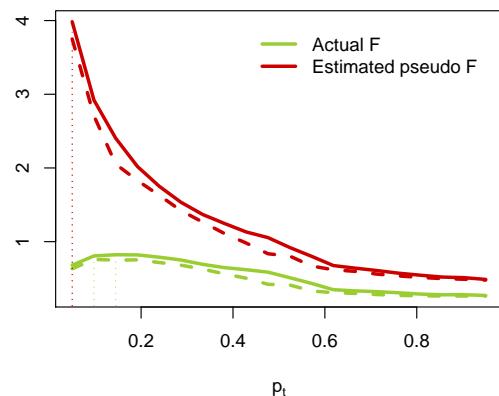
(b) 500

3 parents, 0.15 p, 500 pos., PTAN



(c) 1000

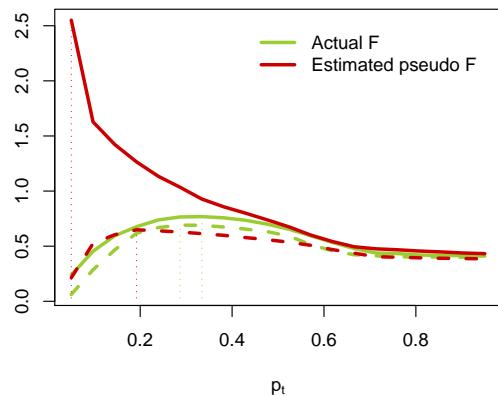
3 parents, 0.15 p, 5000 pos., PTAN



(d) 5000

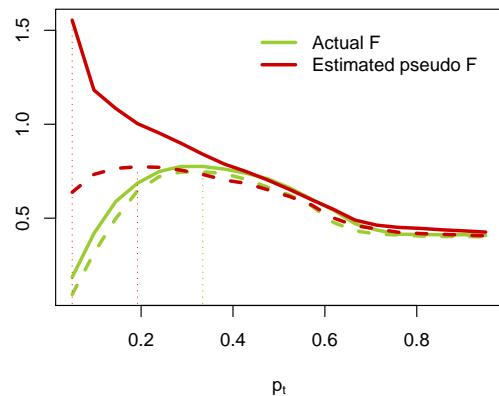
Figure 24: 3 parents, $p=0.15$, PTAN

3 parents, 0.25 p, 100 pos., PNB



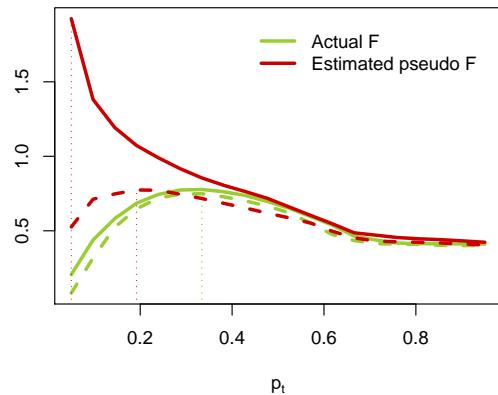
(a) 100

3 parents, 0.25 p, 1000 pos., PNB



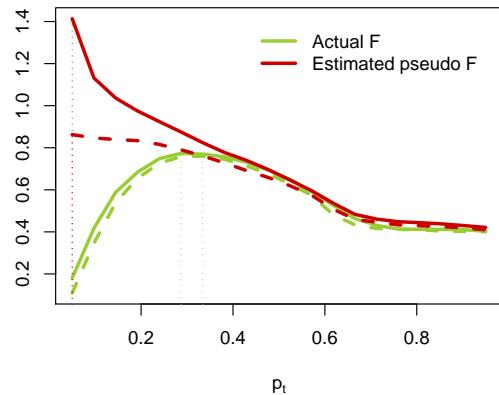
(b) 500

3 parents, 0.25 p, 500 pos., PNB



(c) 1000

3 parents, 0.25 p, 5000 pos., PNB



(d) 5000

Figure 25: 3 parents, $p=0.25$, PNB

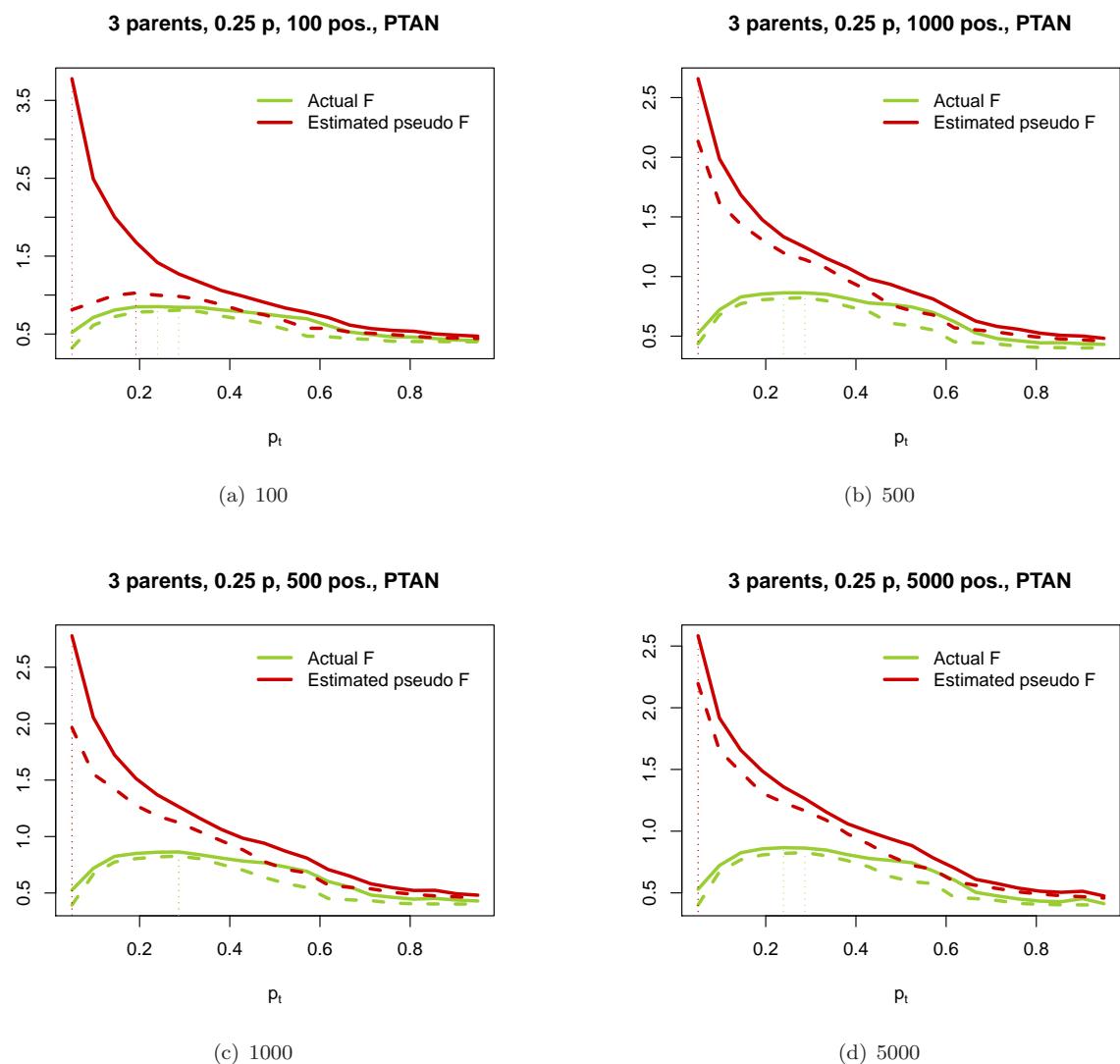


Figure 26: 3 parents, $p=0.25$, PTAN

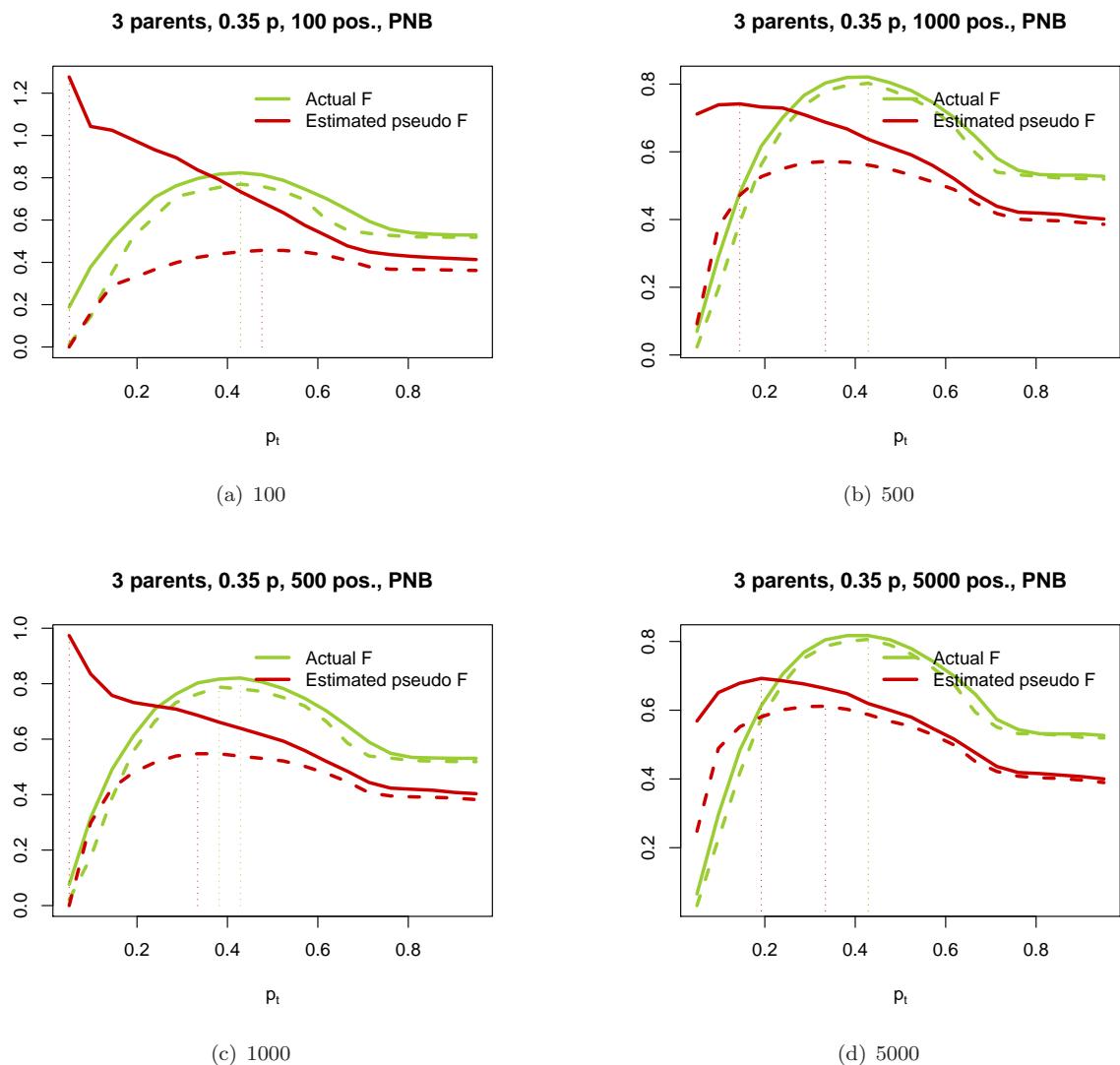


Figure 27: 3 parents, $p=0.35$, PNB

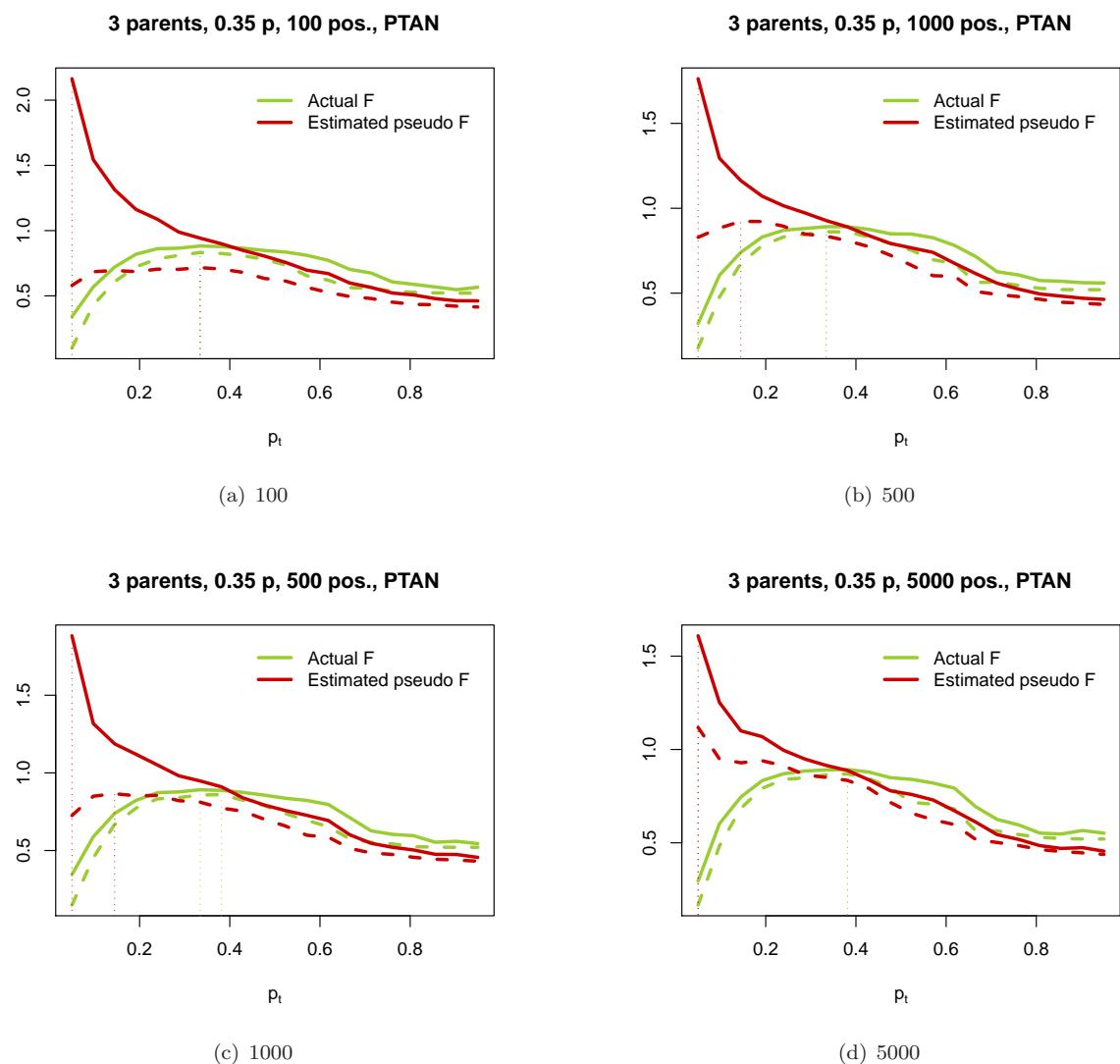


Figure 28: 3 parents, $p=0.35$, PTAN

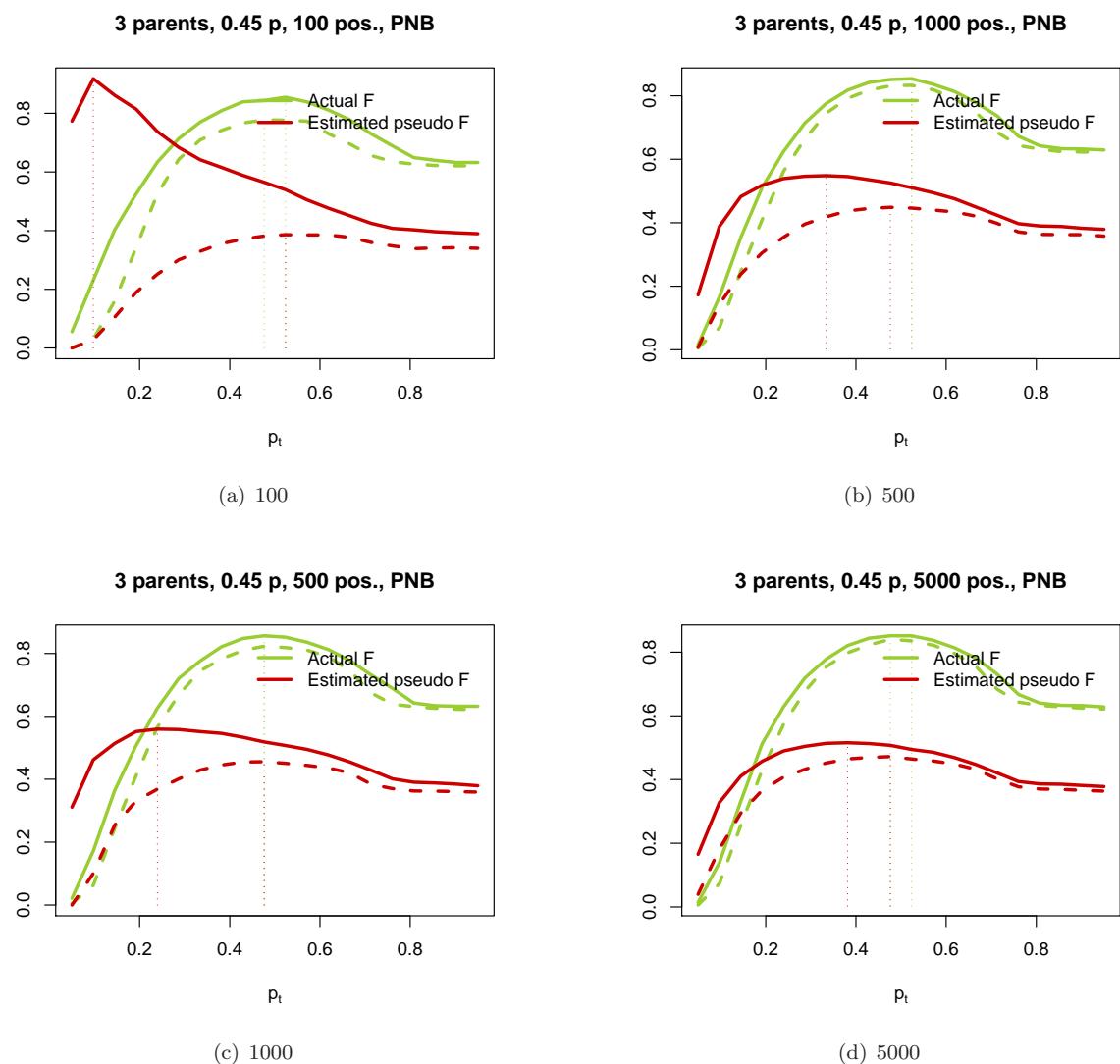


Figure 29: 3 parents, $p=0.45$, PNB

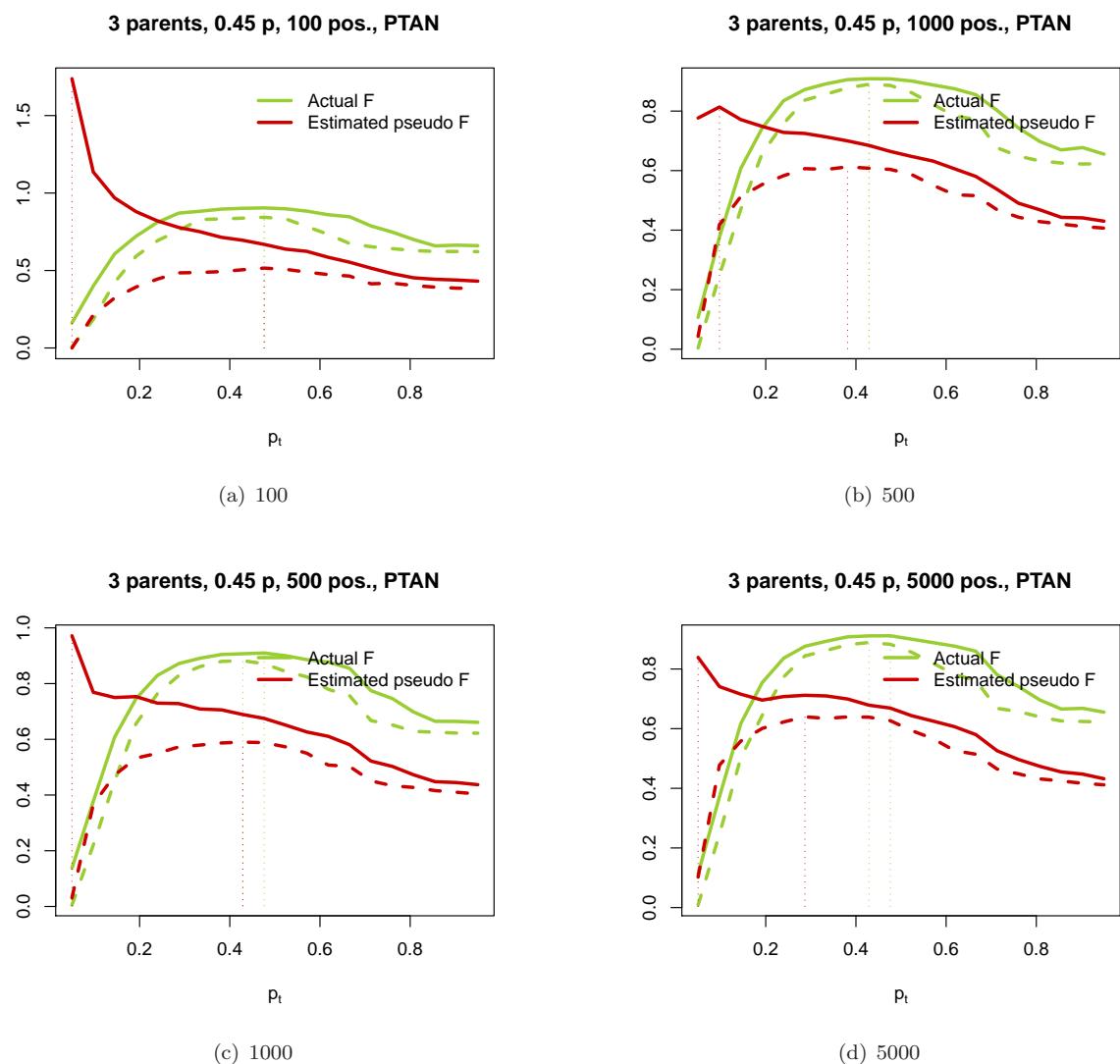


Figure 30: 3 parents, $p=0.45$, PTAN

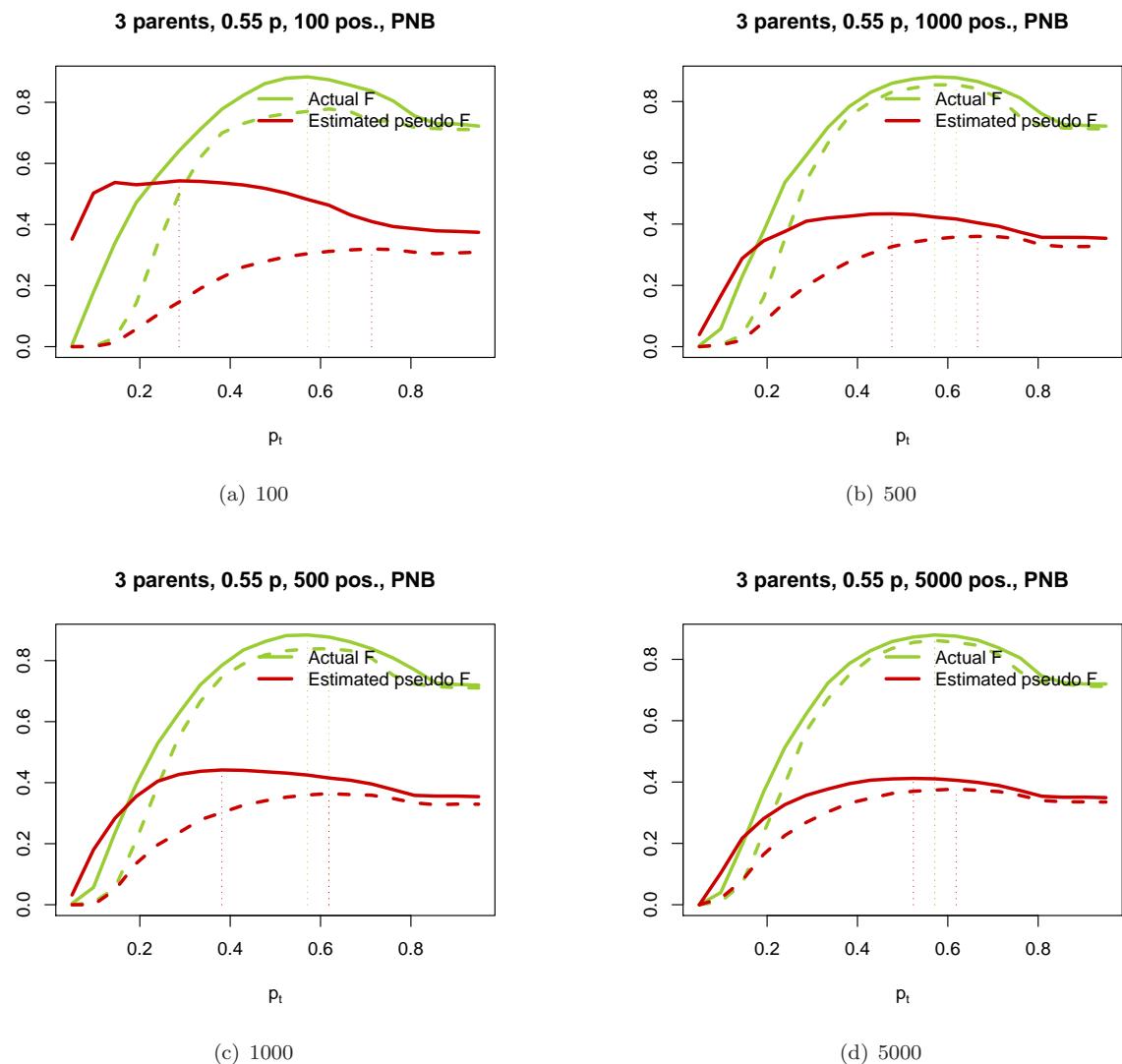


Figure 31: 3 parents, $p=0.55$, PNB

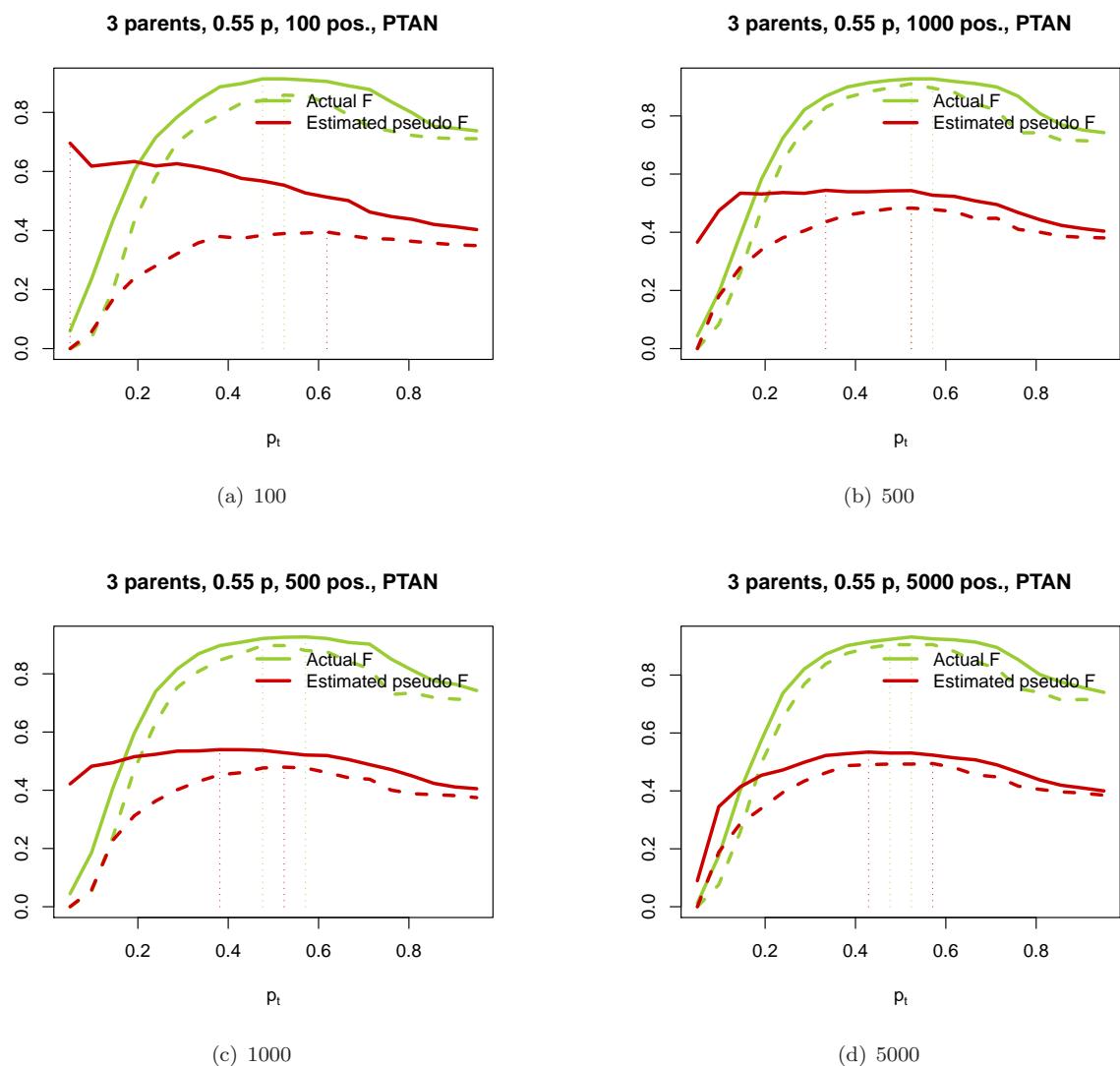


Figure 32: 3 parents, $p=0.55$, PTAN

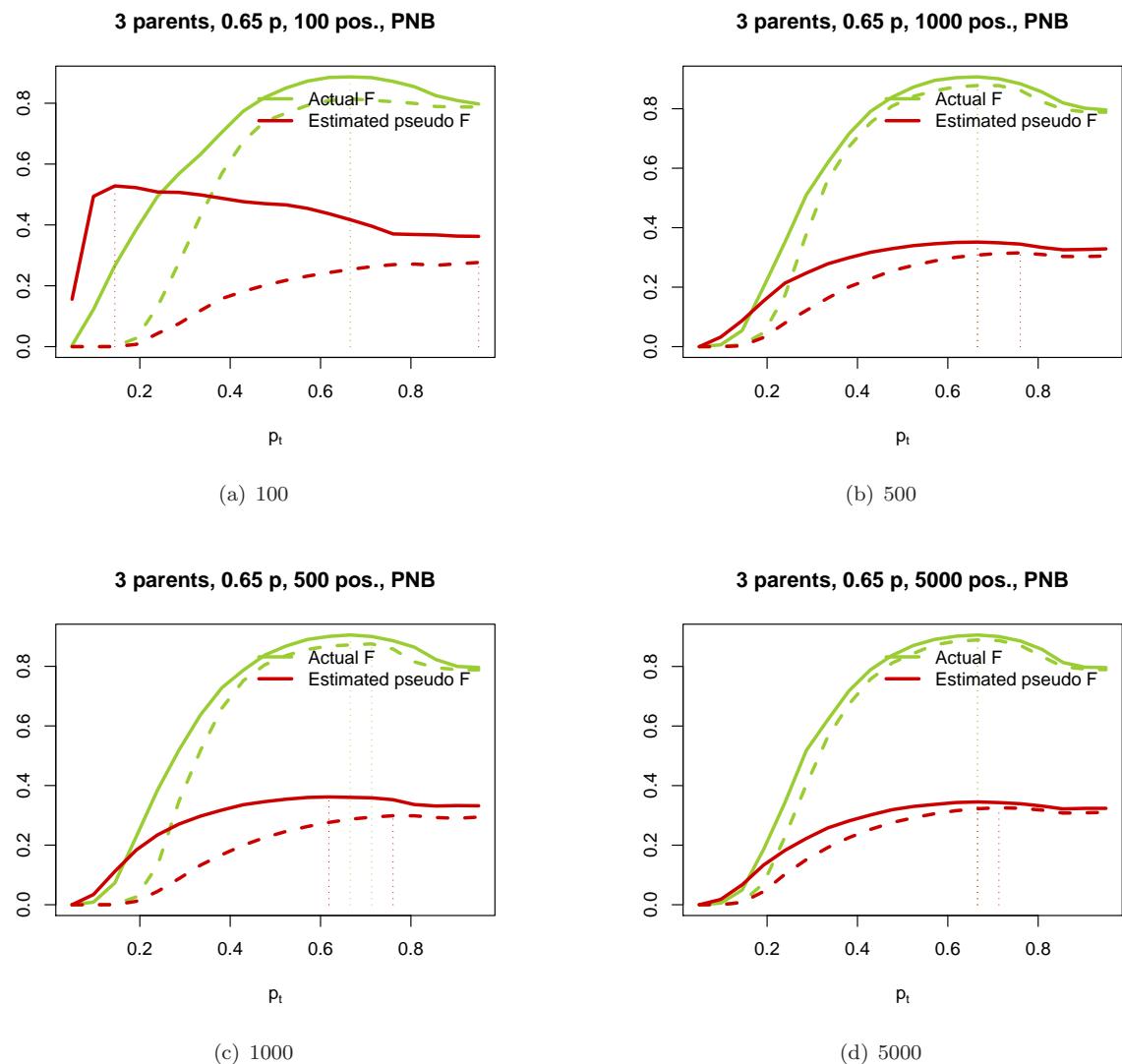


Figure 33: 3 parents, $p=0.65$, PNB

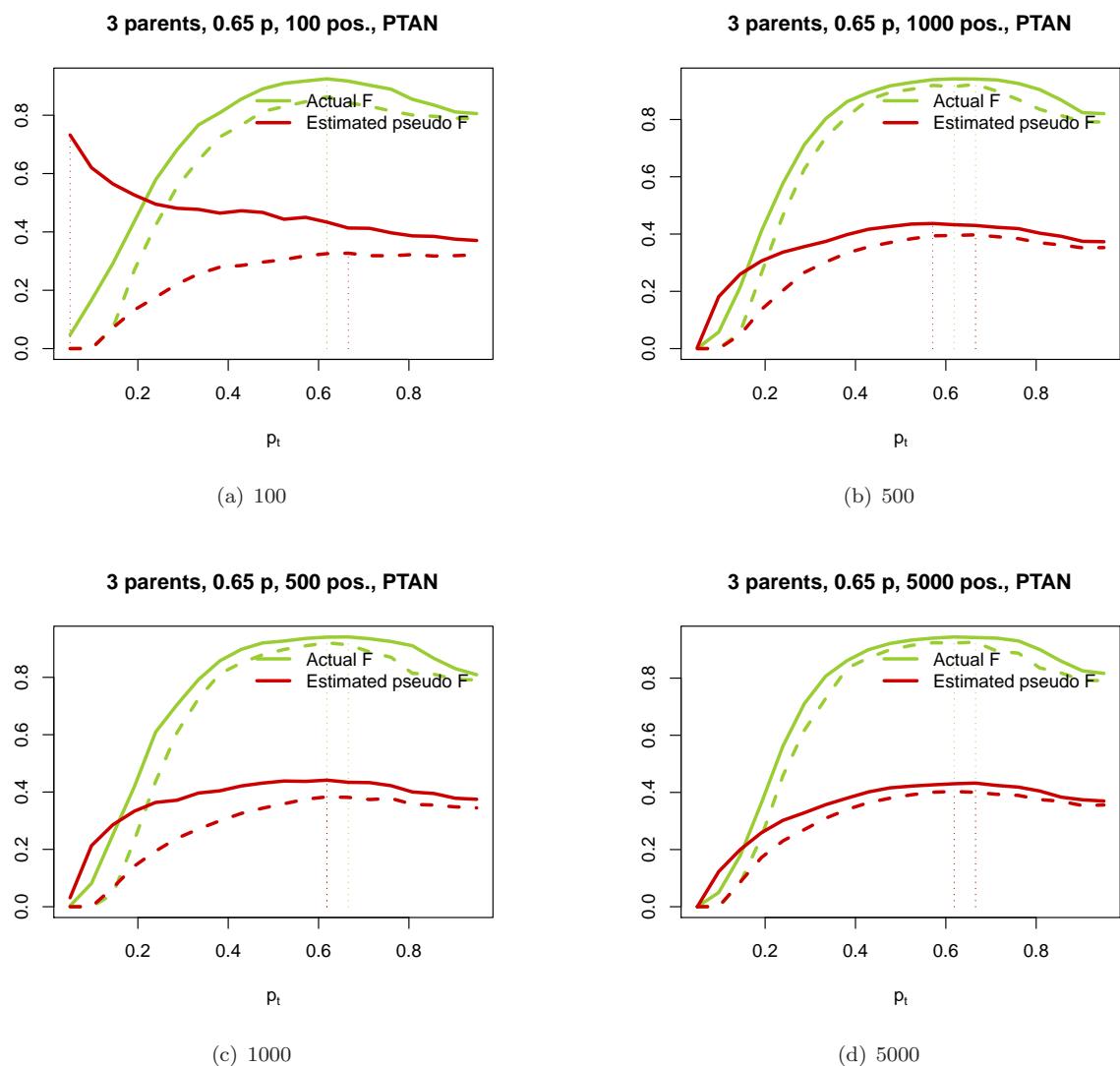


Figure 34: 3 parents, $p=0.65$, PTAN

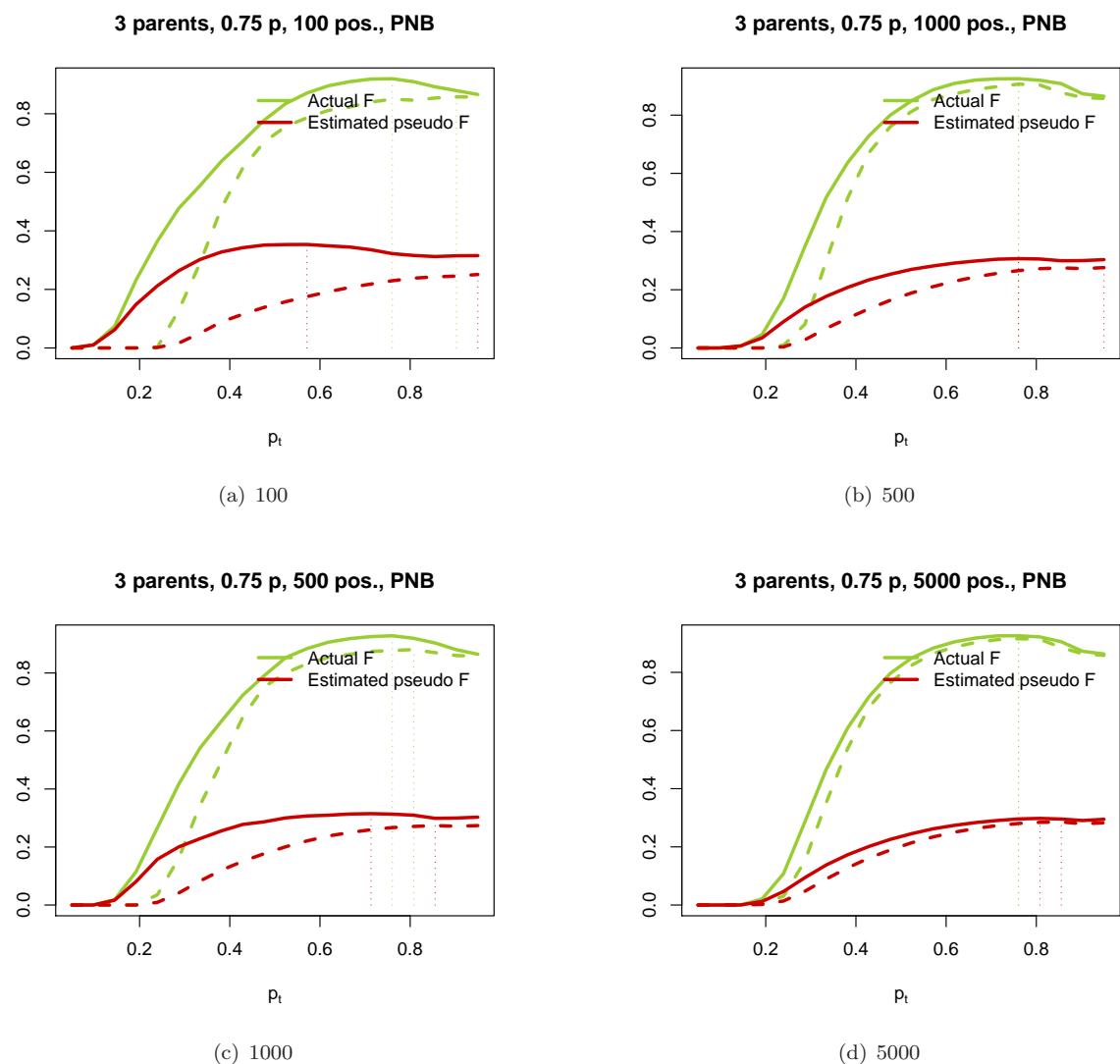


Figure 35: 3 parents, $p=0.75$, PNB

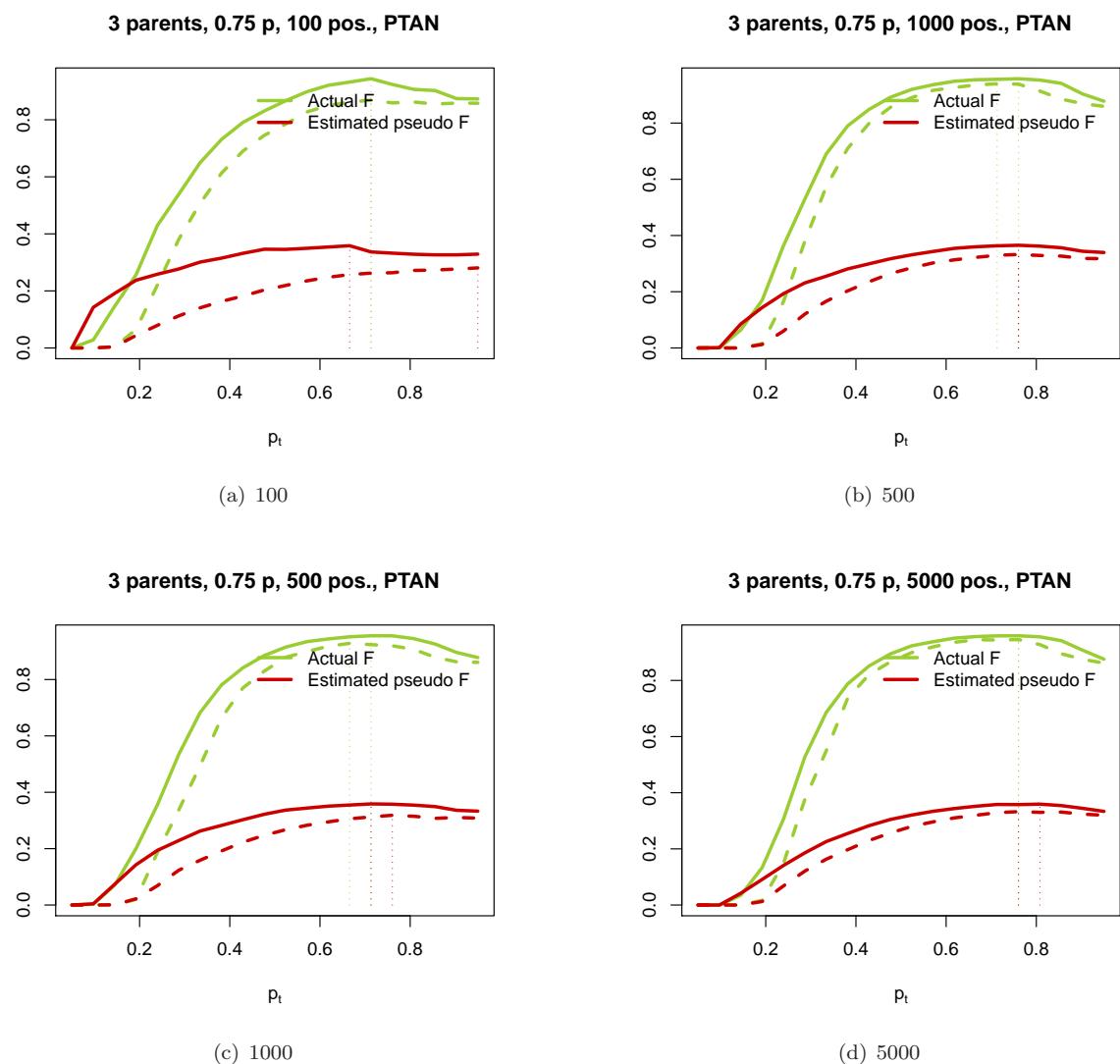
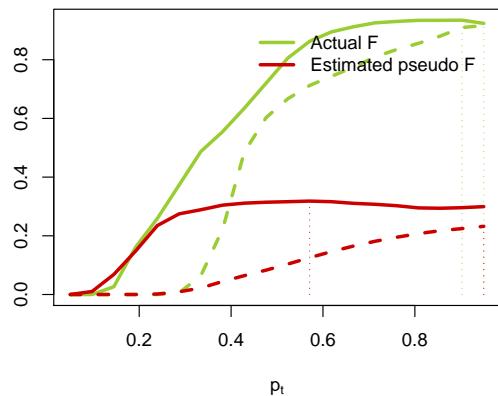


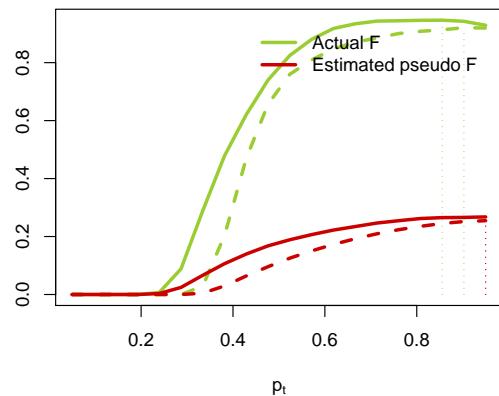
Figure 36: 3 parents, $p=0.75$, PTAN

3 parents, 0.85 p, 100 pos., PNB



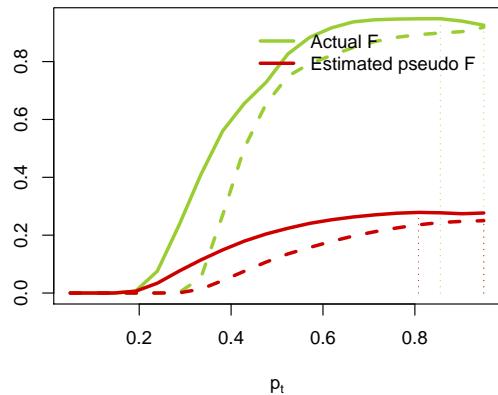
(a) 100

3 parents, 0.85 p, 1000 pos., PNB



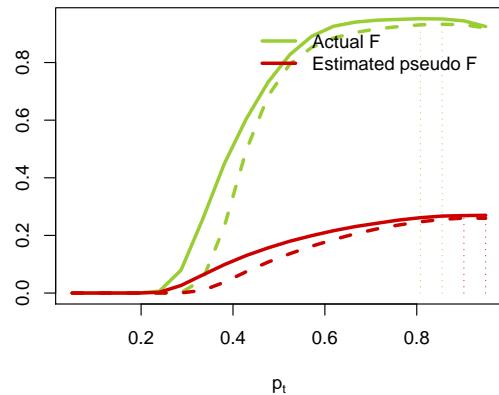
(b) 500

3 parents, 0.85 p, 500 pos., PNB



(c) 1000

3 parents, 0.85 p, 5000 pos., PNB



(d) 5000

Figure 37: 3 parents, $p=0.85$, PNB

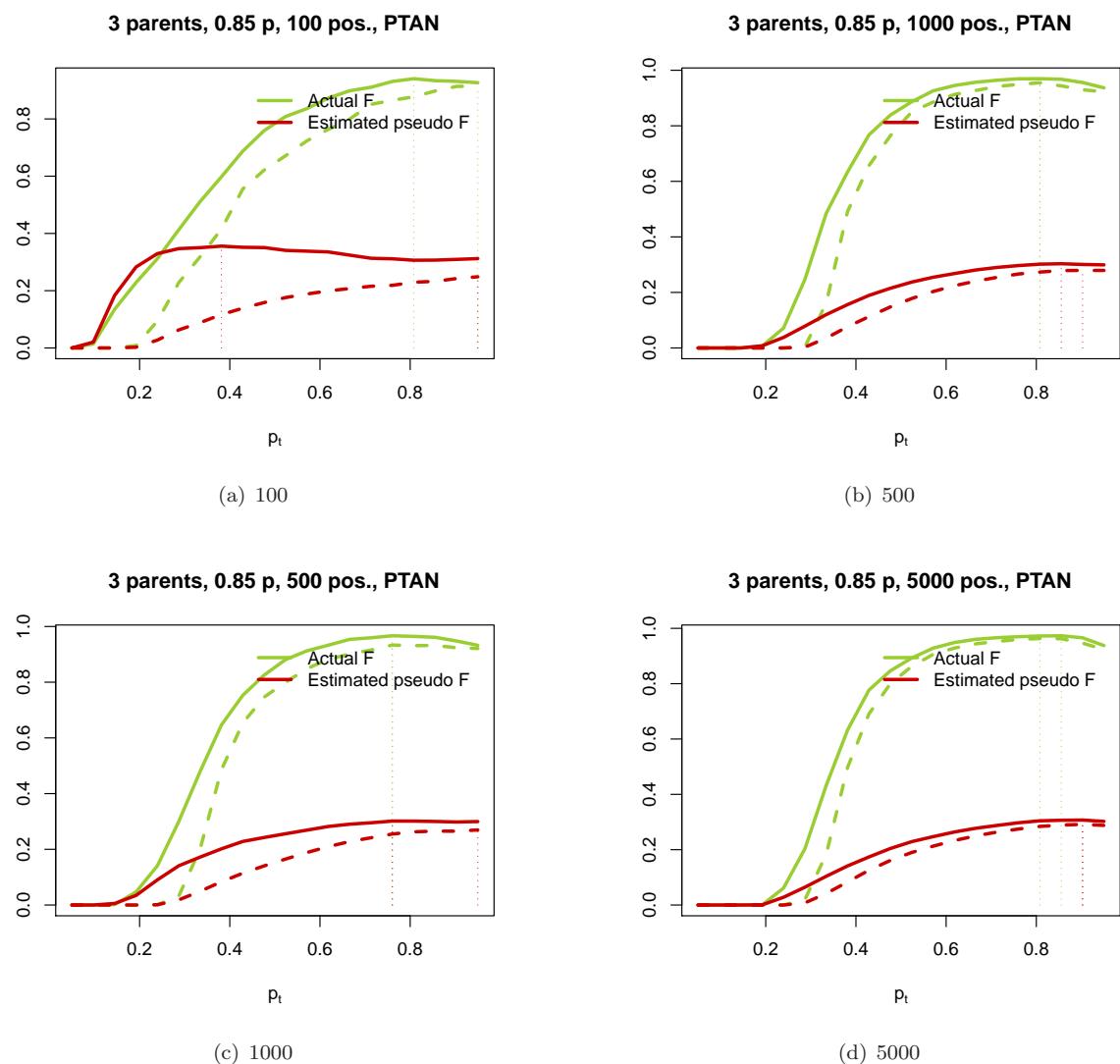


Figure 38: 3 parents, $p=0.85$, PTAN

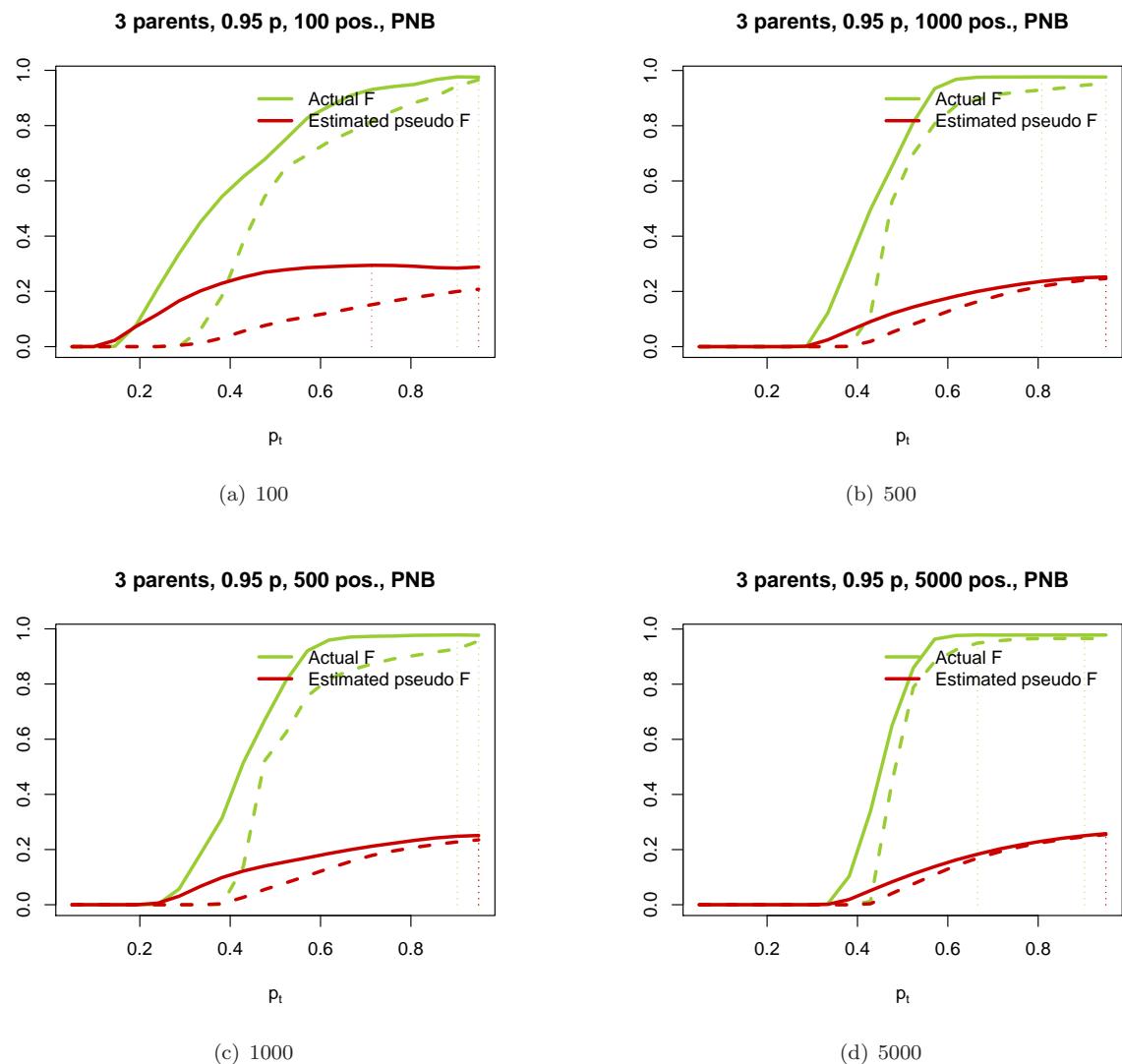


Figure 39: 3 parents, $p=0.95$, PNB

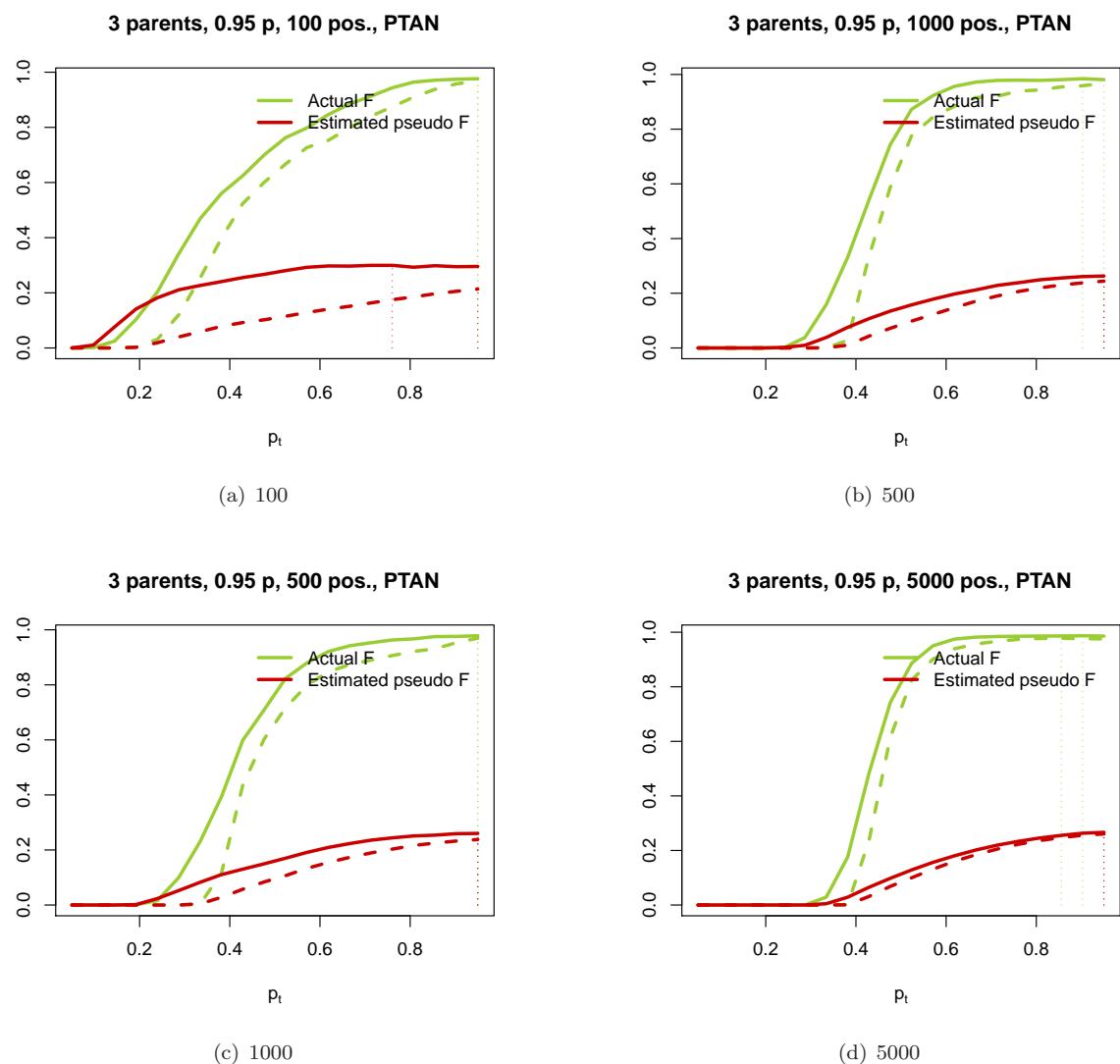
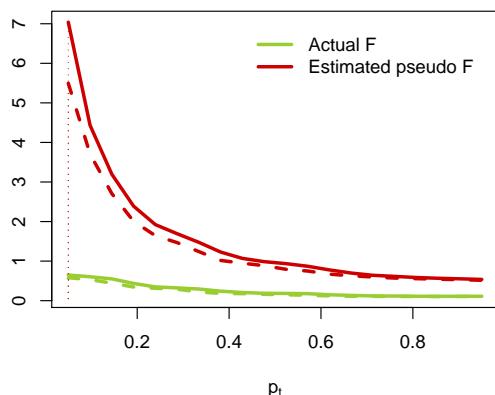


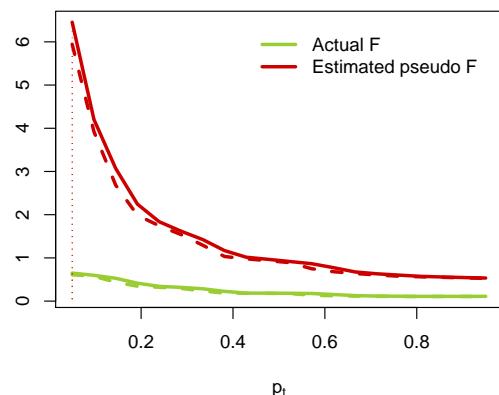
Figure 40: 3 parents, $p=0.95$, PTAN

4 parents, 0.05 p, 100 pos., PNB



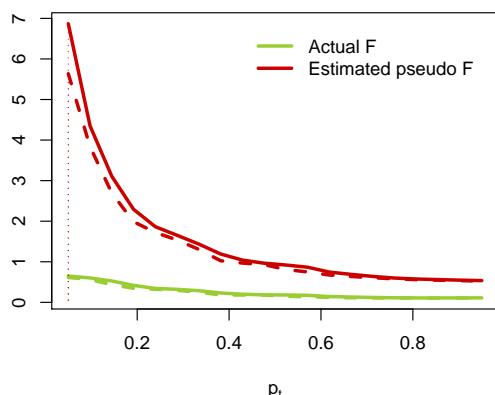
(a) 100

4 parents, 0.05 p, 1000 pos., PNB



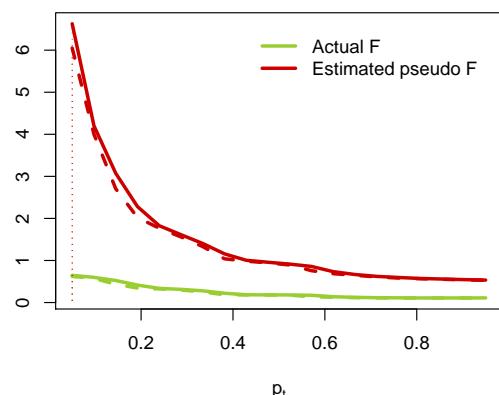
(b) 500

4 parents, 0.05 p, 500 pos., PNB



(c) 1000

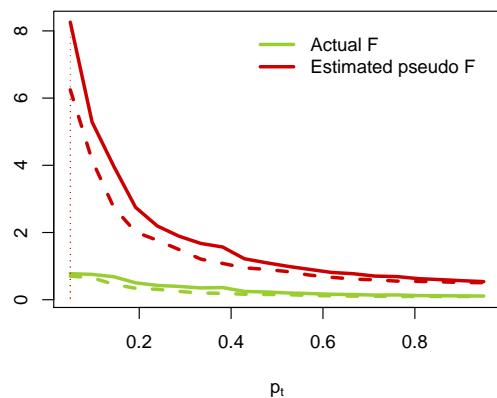
4 parents, 0.05 p, 5000 pos., PNB



(d) 5000

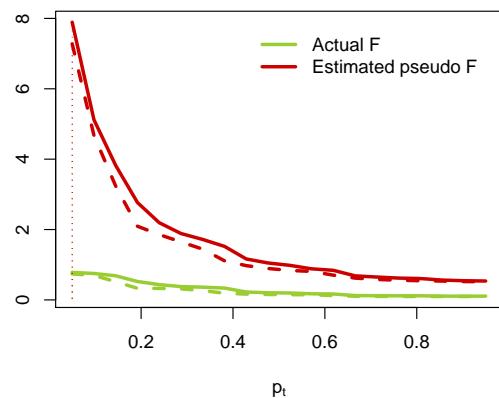
Figure 41: 4 parents, $p=0.05$, PNB

4 parents, 0.05 p, 100 pos., PTAN



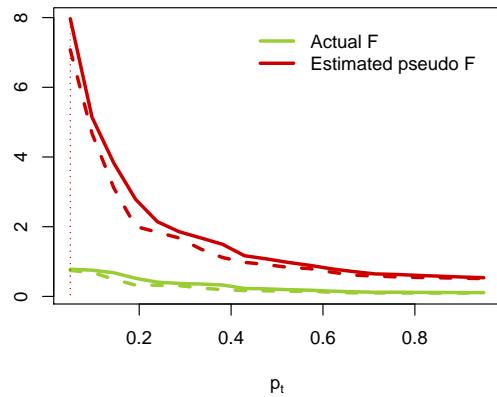
(a) 100

4 parents, 0.05 p, 1000 pos., PTAN



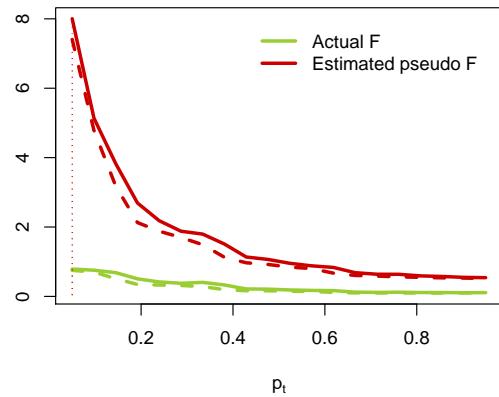
(b) 500

4 parents, 0.05 p, 500 pos., PTAN



(c) 1000

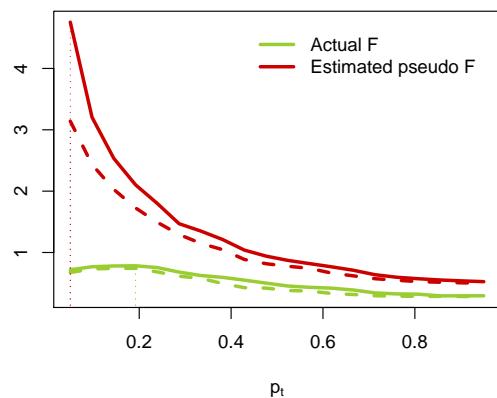
4 parents, 0.05 p, 5000 pos., PTAN



(d) 5000

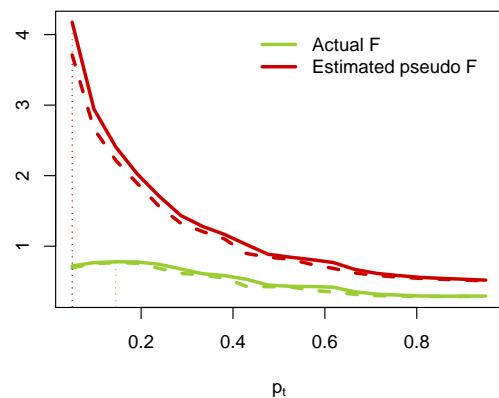
Figure 42: 4 parents, $p=0.05$, PTAN

4 parents, 0.15 p, 100 pos., PNB



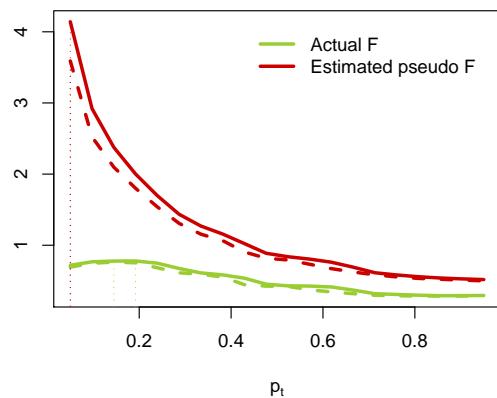
(a) 100

4 parents, 0.15 p, 1000 pos., PNB



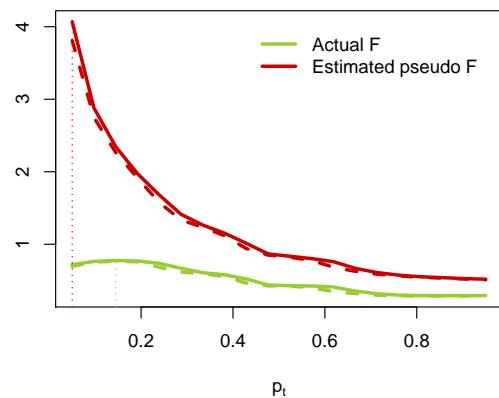
(b) 500

4 parents, 0.15 p, 500 pos., PNB



(c) 1000

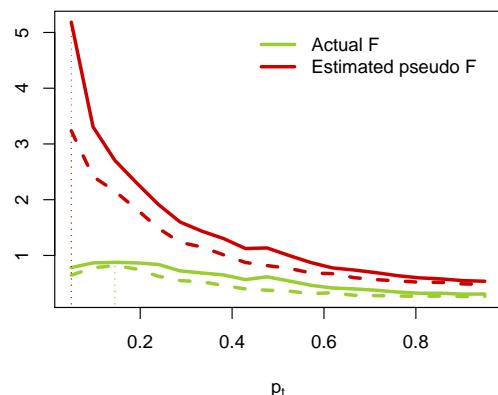
4 parents, 0.15 p, 5000 pos., PNB



(d) 5000

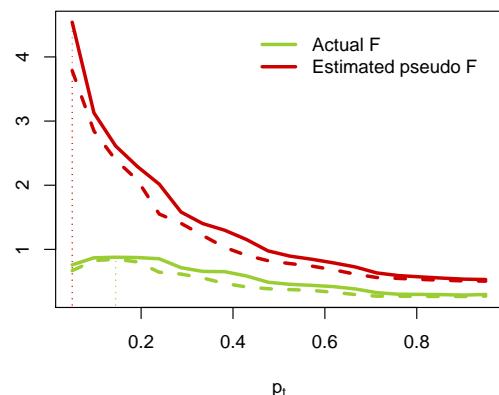
Figure 43: 4 parents, $p=0.15$, PNB

4 parents, 0.15 p, 100 pos., PTAN



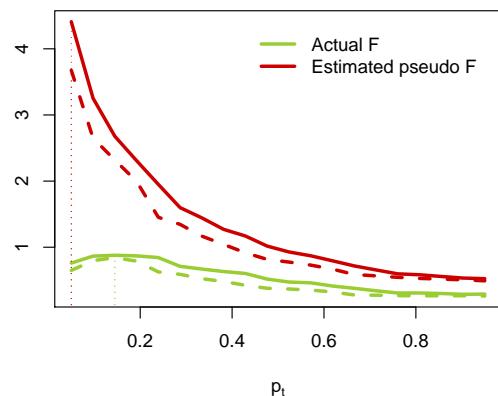
(a) 100

4 parents, 0.15 p, 1000 pos., PTAN



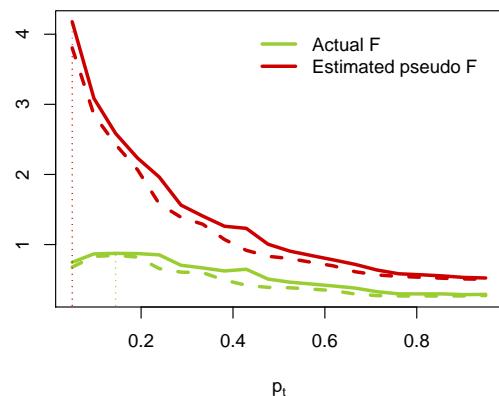
(b) 500

4 parents, 0.15 p, 500 pos., PTAN



(c) 1000

4 parents, 0.15 p, 5000 pos., PTAN



(d) 5000

Figure 44: 4 parents, $p=0.15$, PTAN

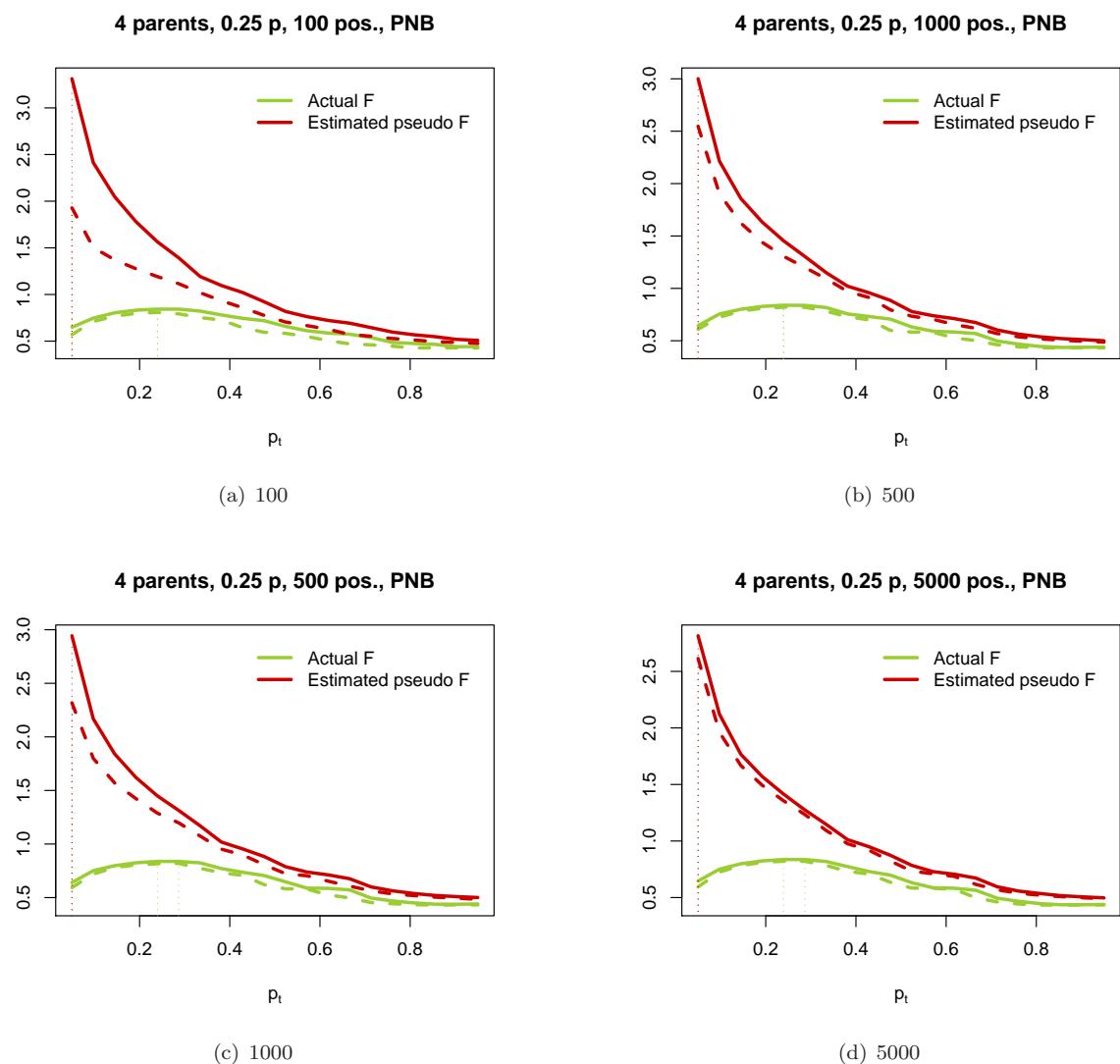
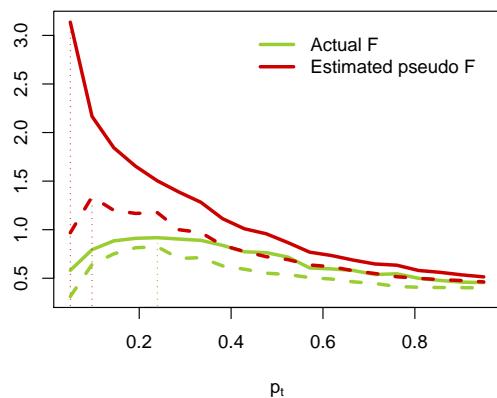


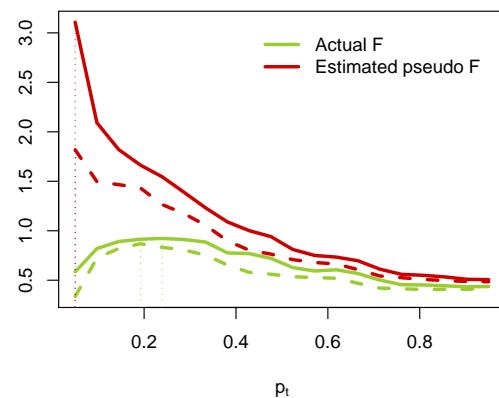
Figure 45: 4 parents, $p=0.25$, PNB

4 parents, 0.25 p, 100 pos., PTAN



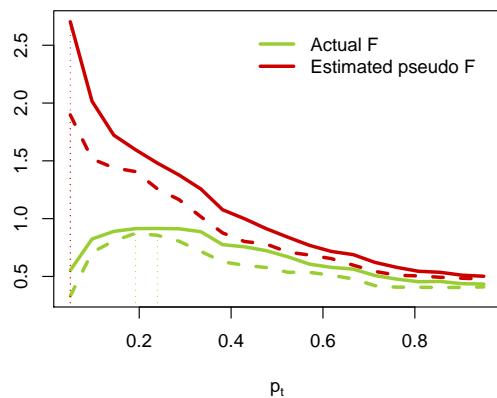
(a) 100

4 parents, 0.25 p, 1000 pos., PTAN



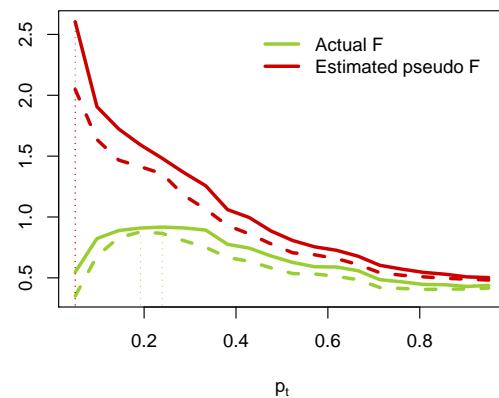
(b) 500

4 parents, 0.25 p, 500 pos., PTAN



(c) 1000

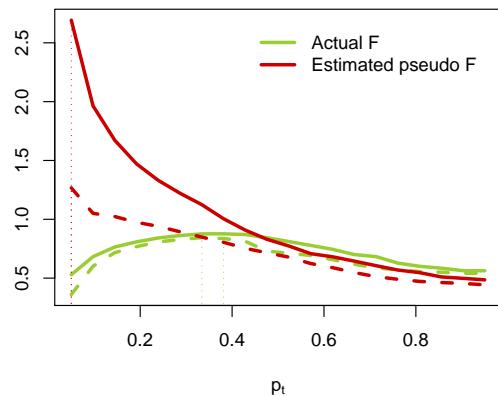
4 parents, 0.25 p, 5000 pos., PTAN



(d) 5000

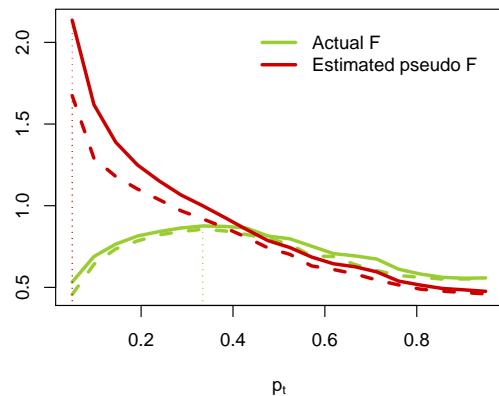
Figure 46: 4 parents, $p=0.25$, PTAN

4 parents, 0.35 p, 100 pos., PNB



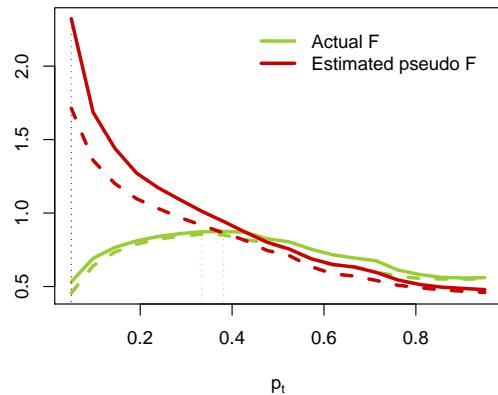
(a) 100

4 parents, 0.35 p, 1000 pos., PNB



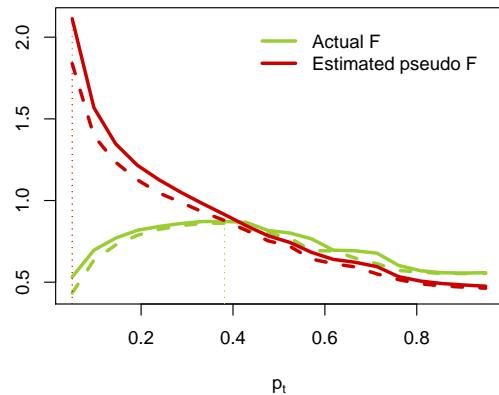
(b) 500

4 parents, 0.35 p, 500 pos., PNB



(c) 1000

4 parents, 0.35 p, 5000 pos., PNB



(d) 5000

Figure 47: 4 parents, $p=0.35$, PNB

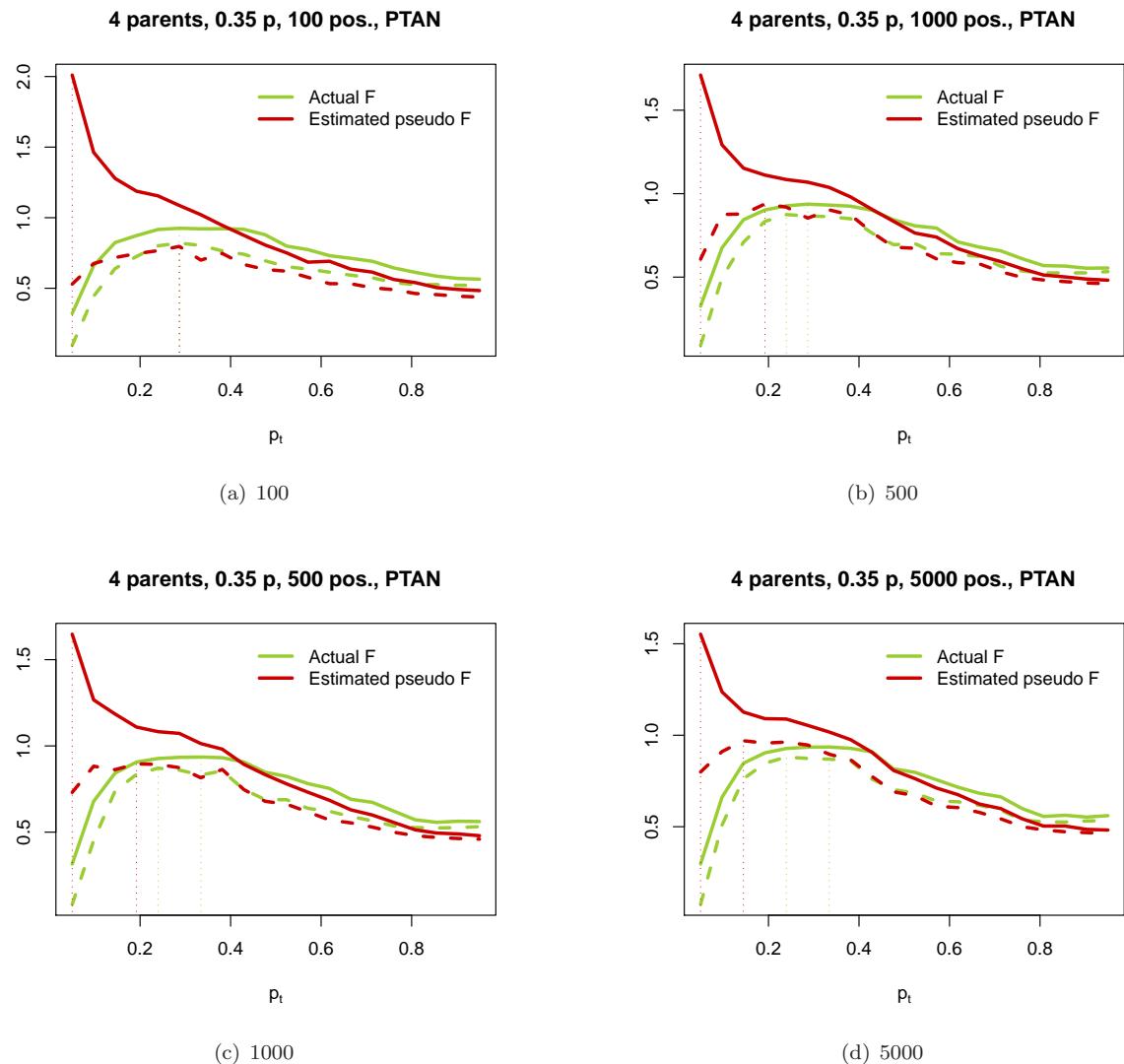


Figure 48: 4 parents, $p=0.35$, PTAN

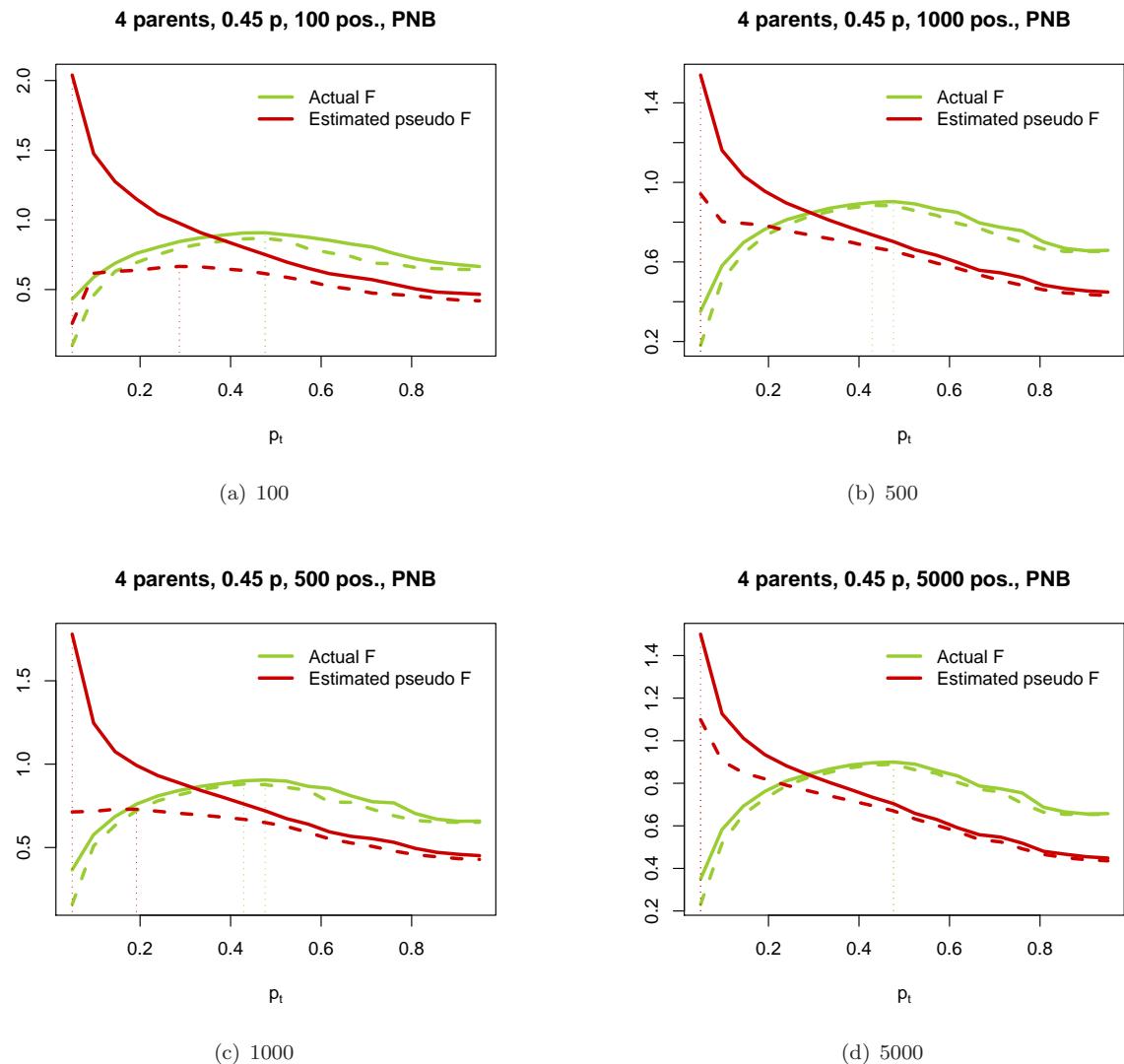
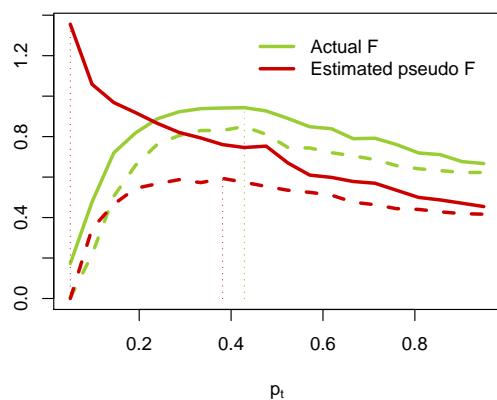


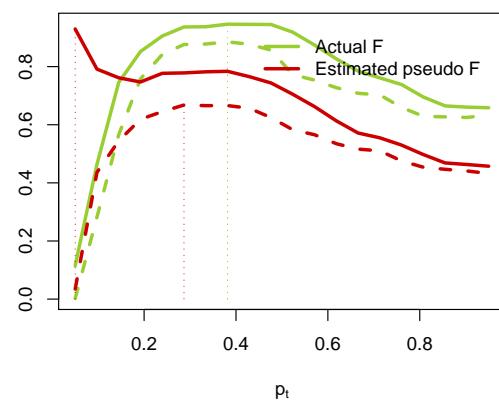
Figure 49: 4 parents, $p=0.45$, PNB

4 parents, 0.45 p, 100 pos., PTAN



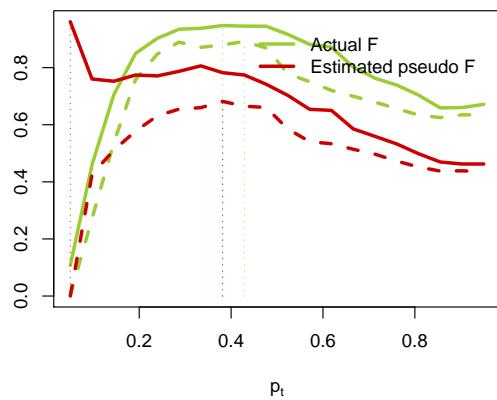
(a) 100

4 parents, 0.45 p, 1000 pos., PTAN



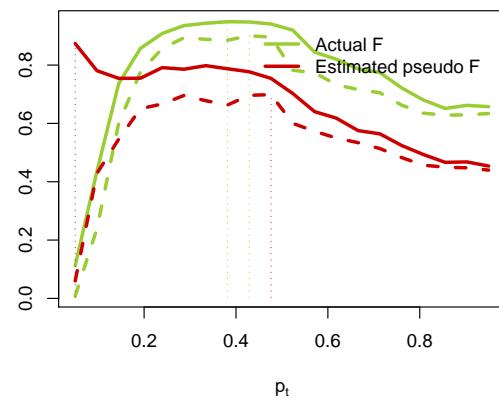
(b) 500

4 parents, 0.45 p, 500 pos., PTAN



(c) 1000

4 parents, 0.45 p, 5000 pos., PTAN



(d) 5000

Figure 50: 4 parents, $p=0.45$, PTAN

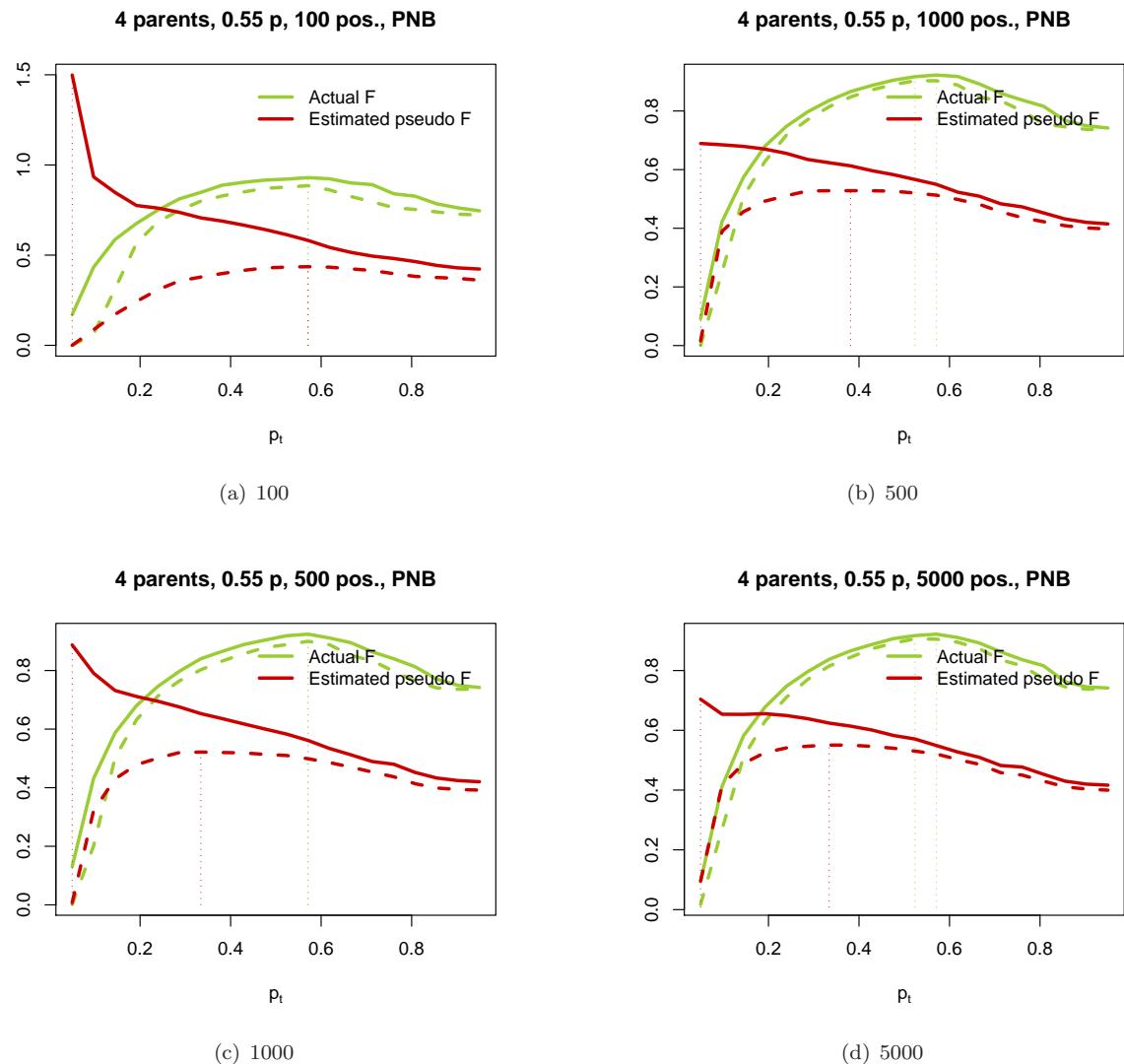


Figure 51: 4 parents, $p=0.55$, PNB

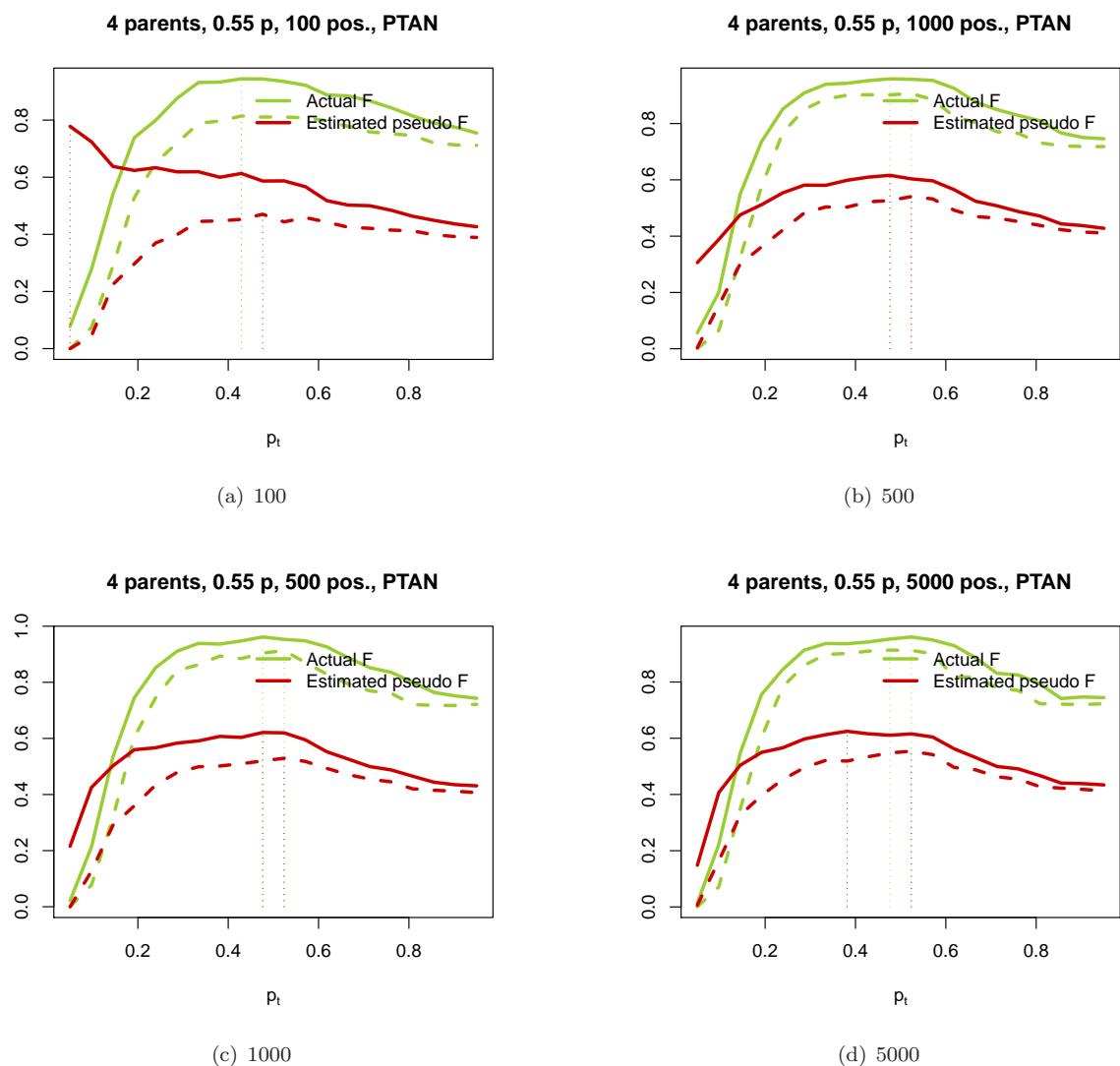


Figure 52: 4 parents, $p=0.55$, PTAN

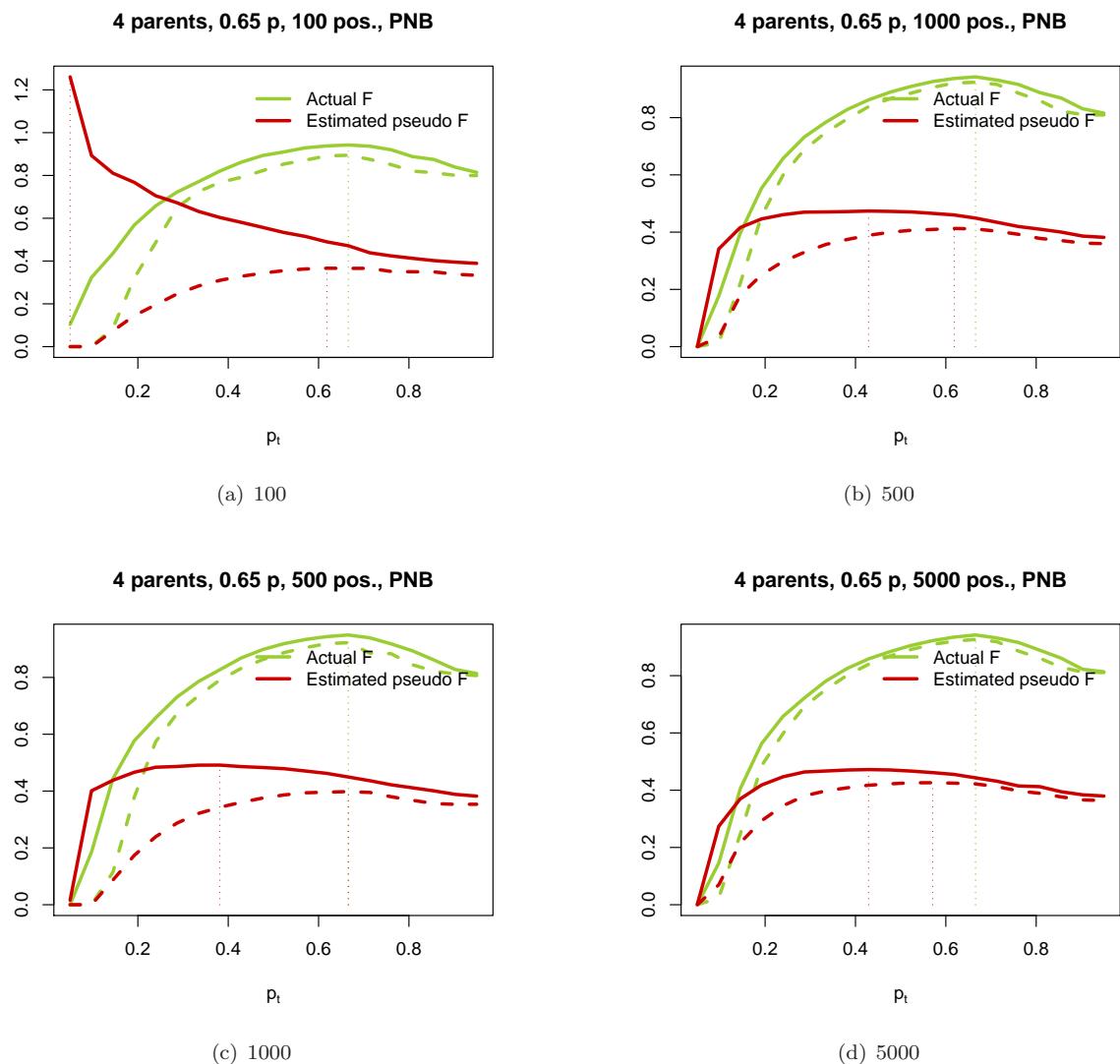


Figure 53: 4 parents, $p=0.65$, PNB

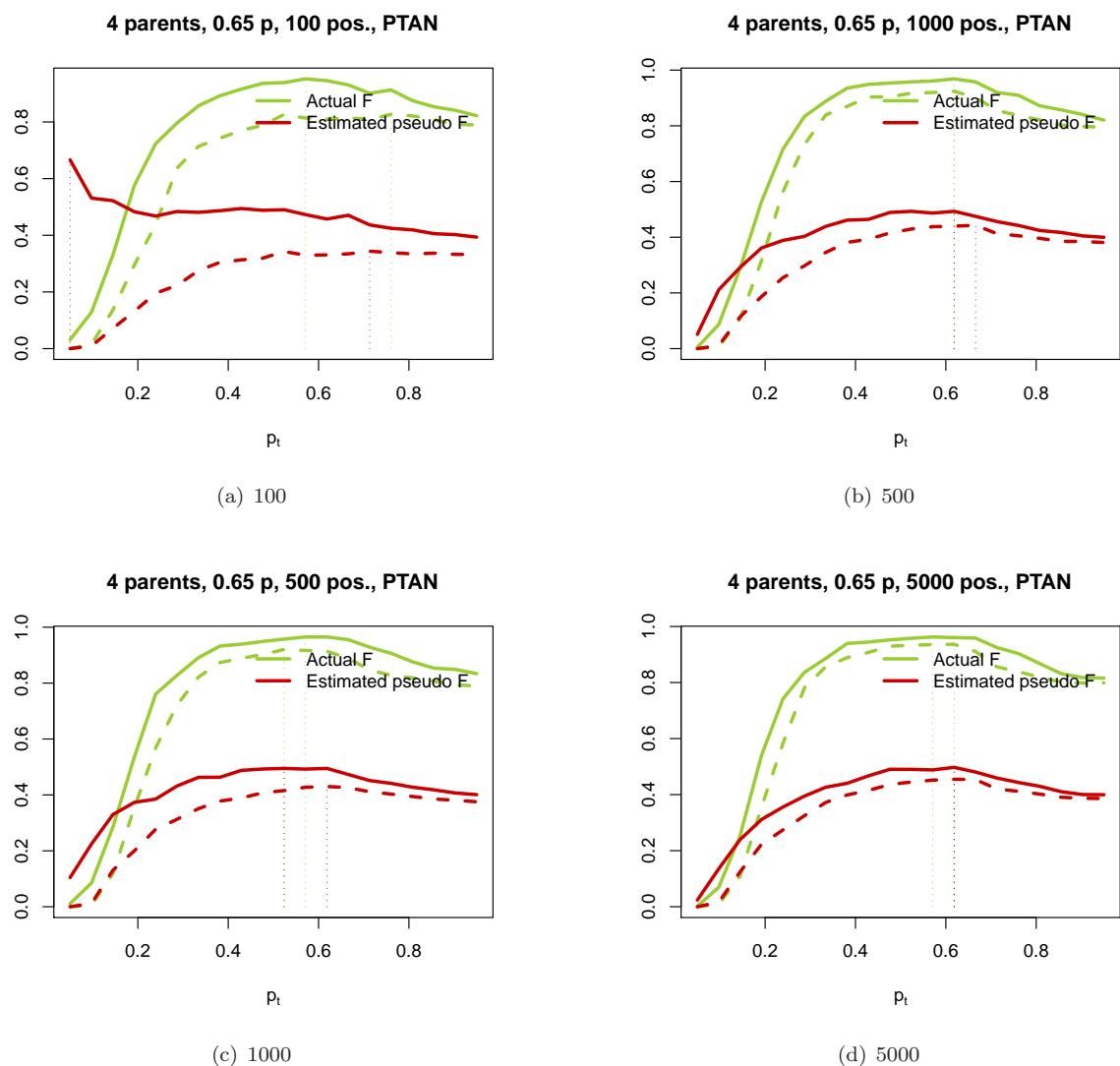


Figure 54: 4 parents, $p=0.65$, PTAN

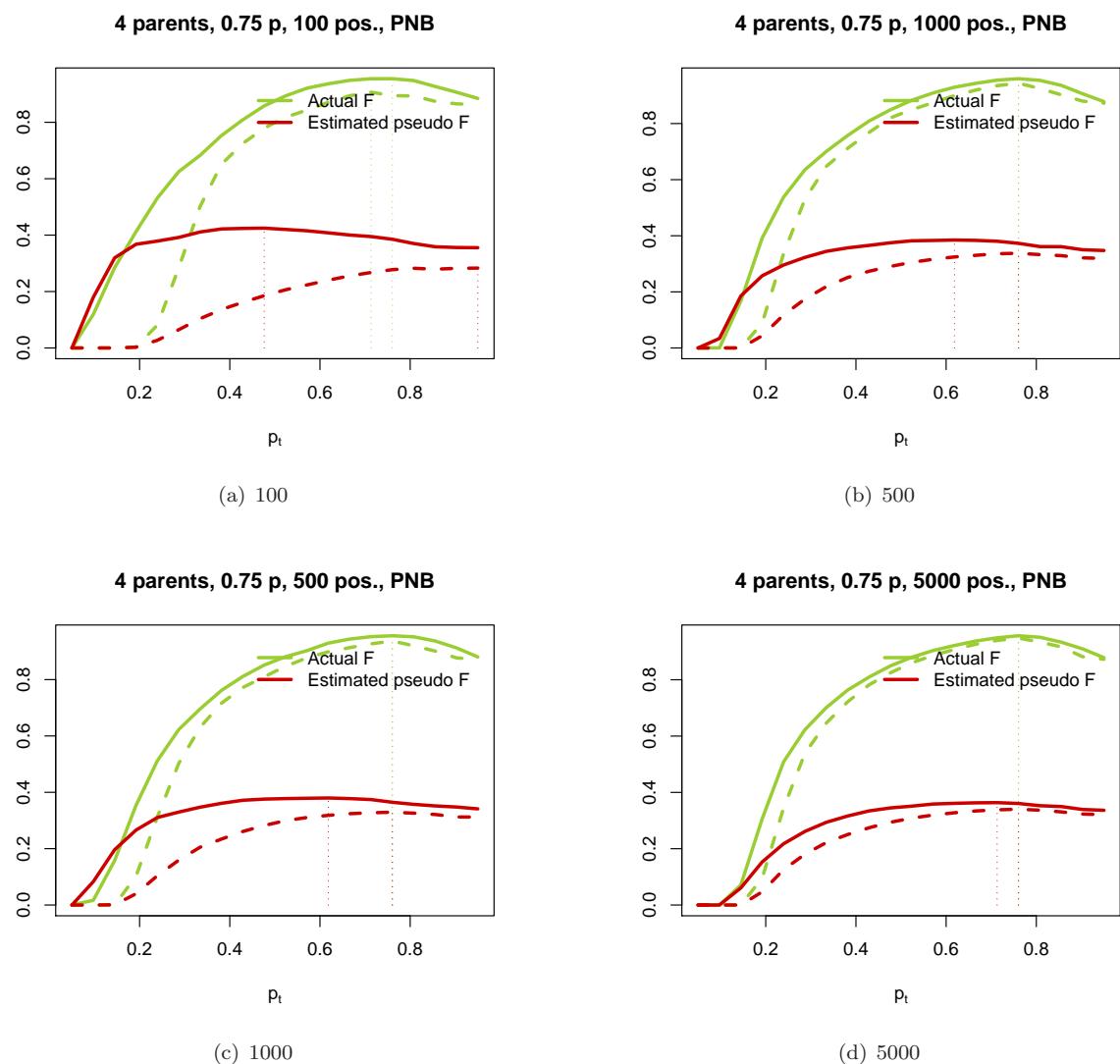


Figure 55: 4 parents, $p=0.75$, PNB

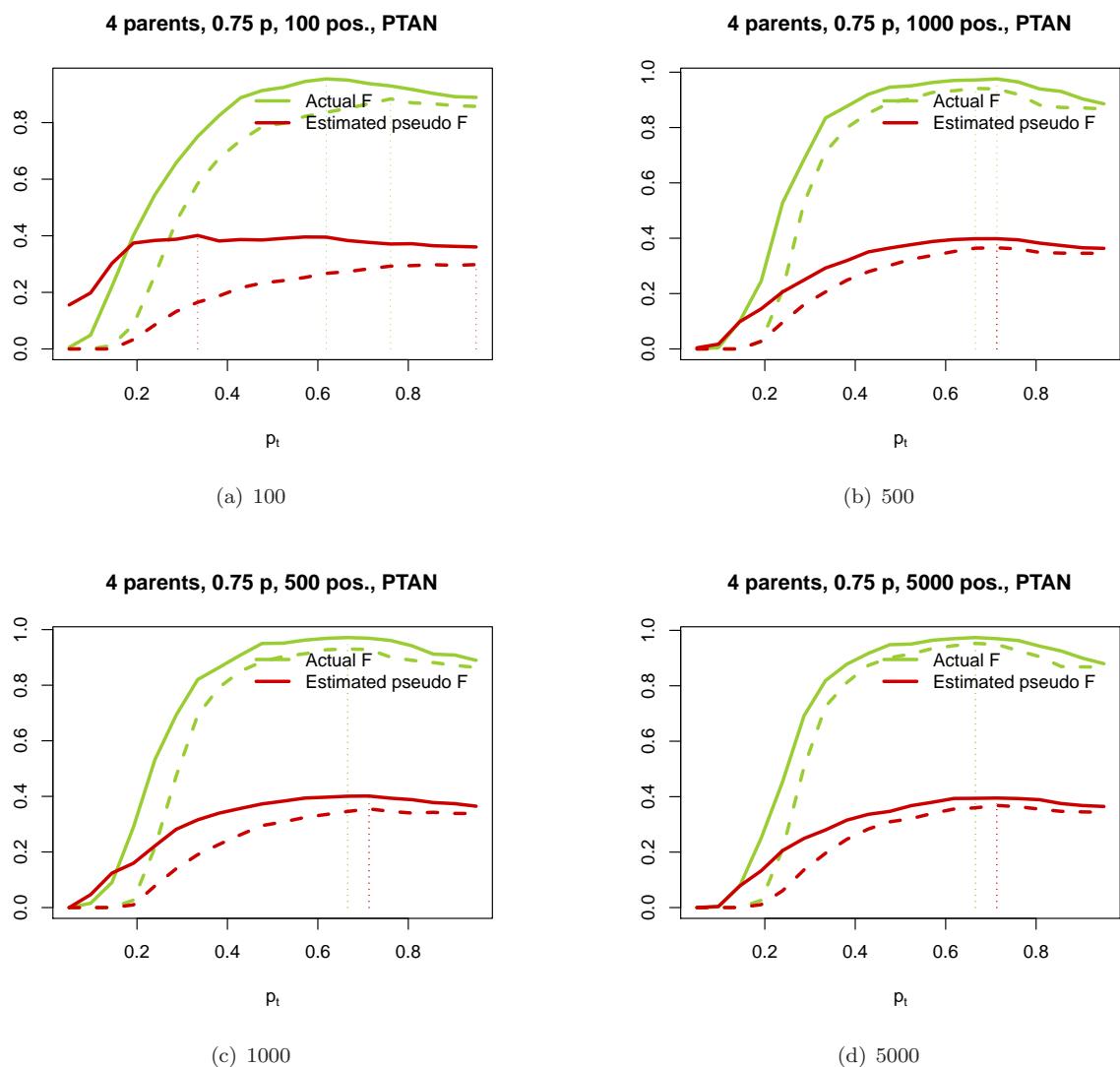


Figure 56: 4 parents, $p=0.75$, PTAN

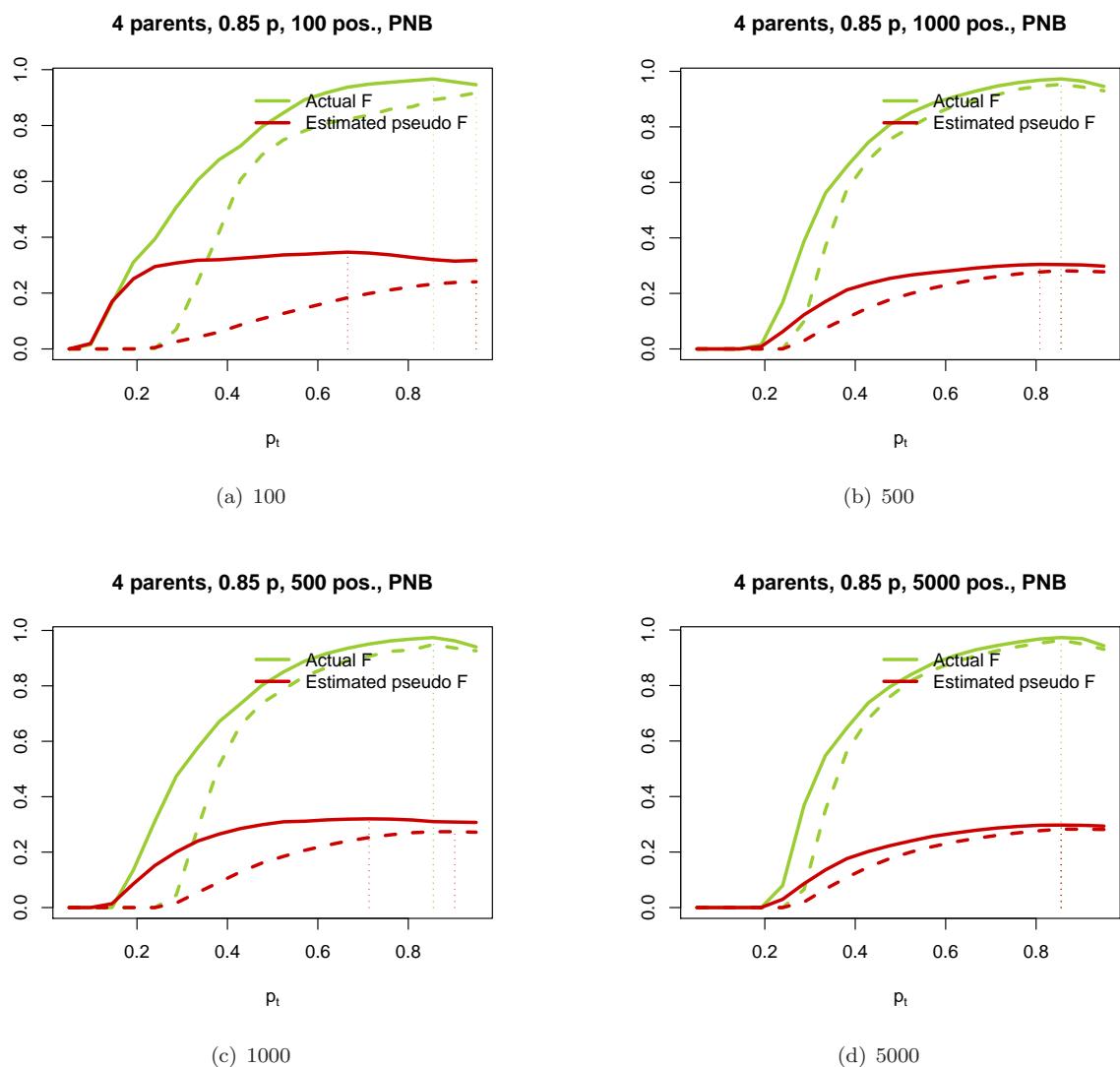


Figure 57: 4 parents, $p=0.85$, PNB

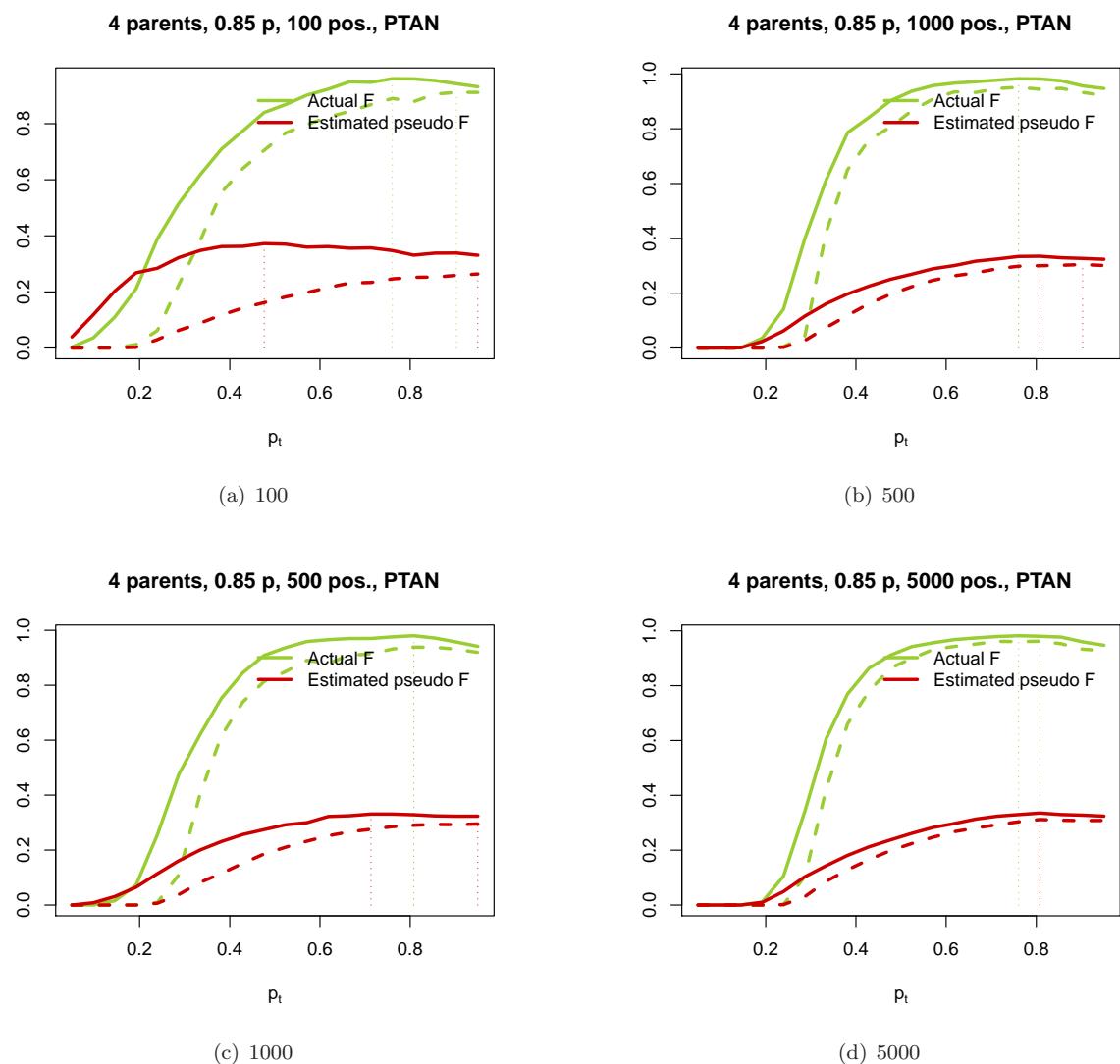


Figure 58: 4 parents, $p=0.85$, PTAN

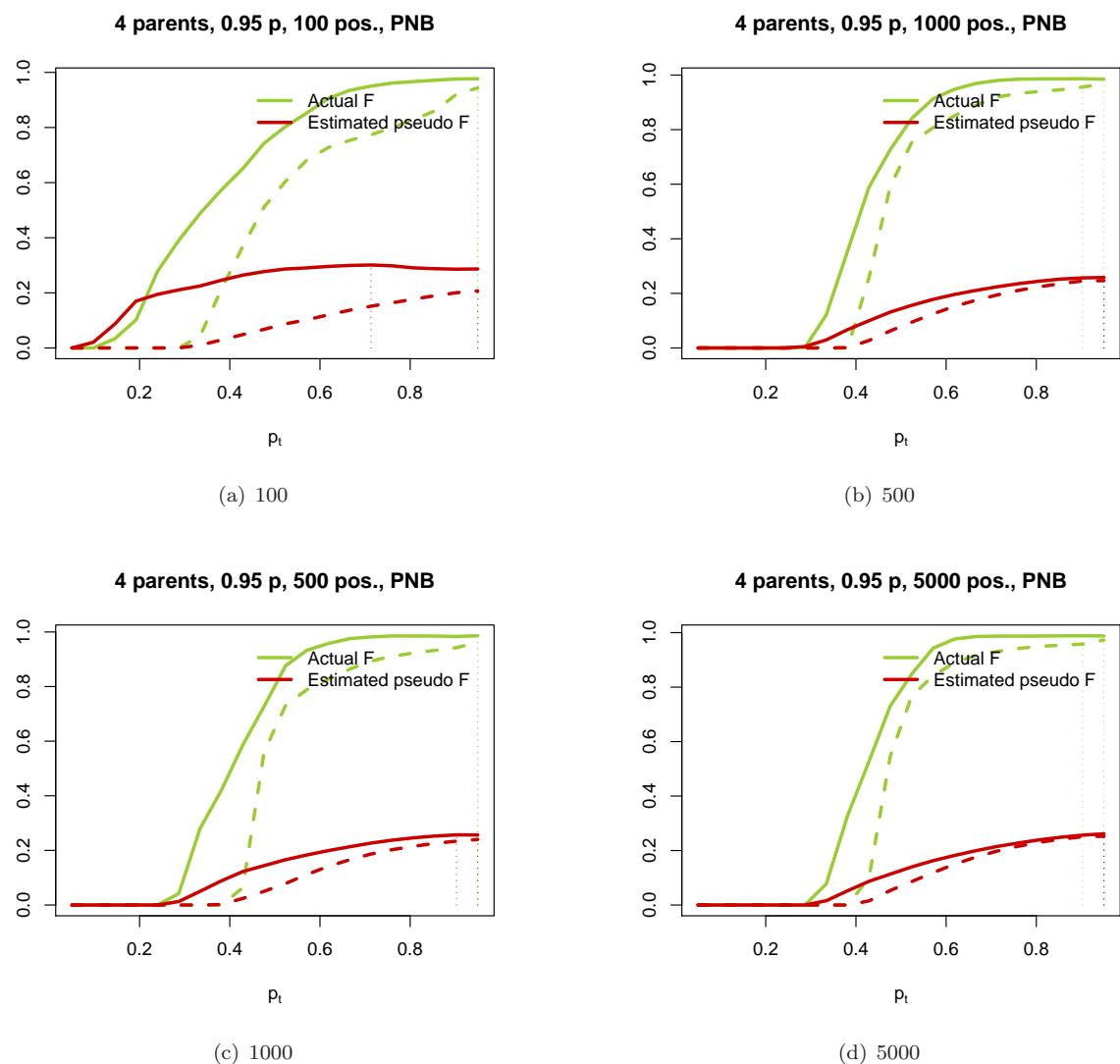
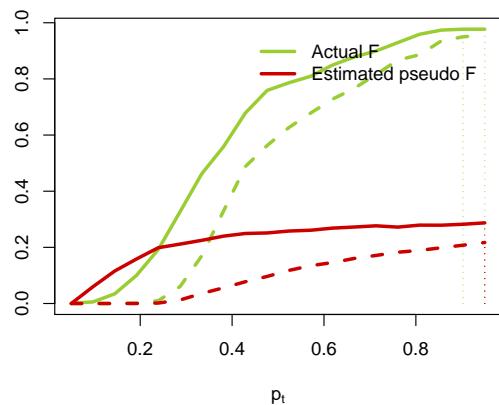


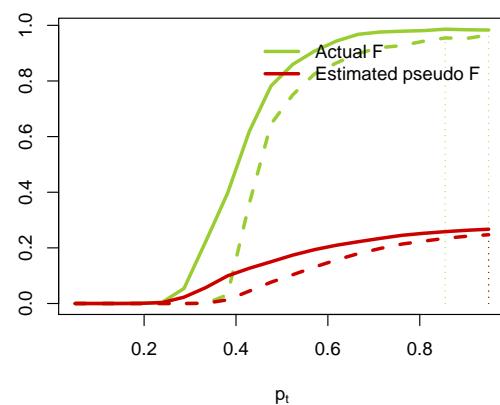
Figure 59: 4 parents, $p=0.95$, PNB

4 parents, 0.95 p, 100 pos., PTAN



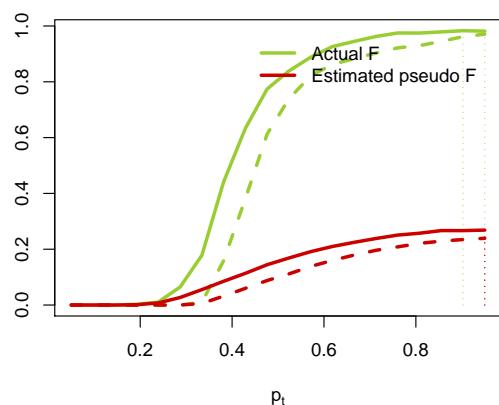
(a) 100

4 parents, 0.95 p, 1000 pos., PTAN



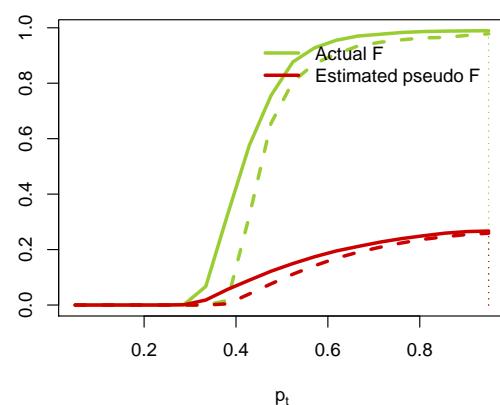
(b) 500

4 parents, 0.95 p, 500 pos., PTAN



(c) 1000

4 parents, 0.95 p, 5000 pos., PTAN



(d) 5000

Figure 60: 4 parents, $p=0.95$, PTAN