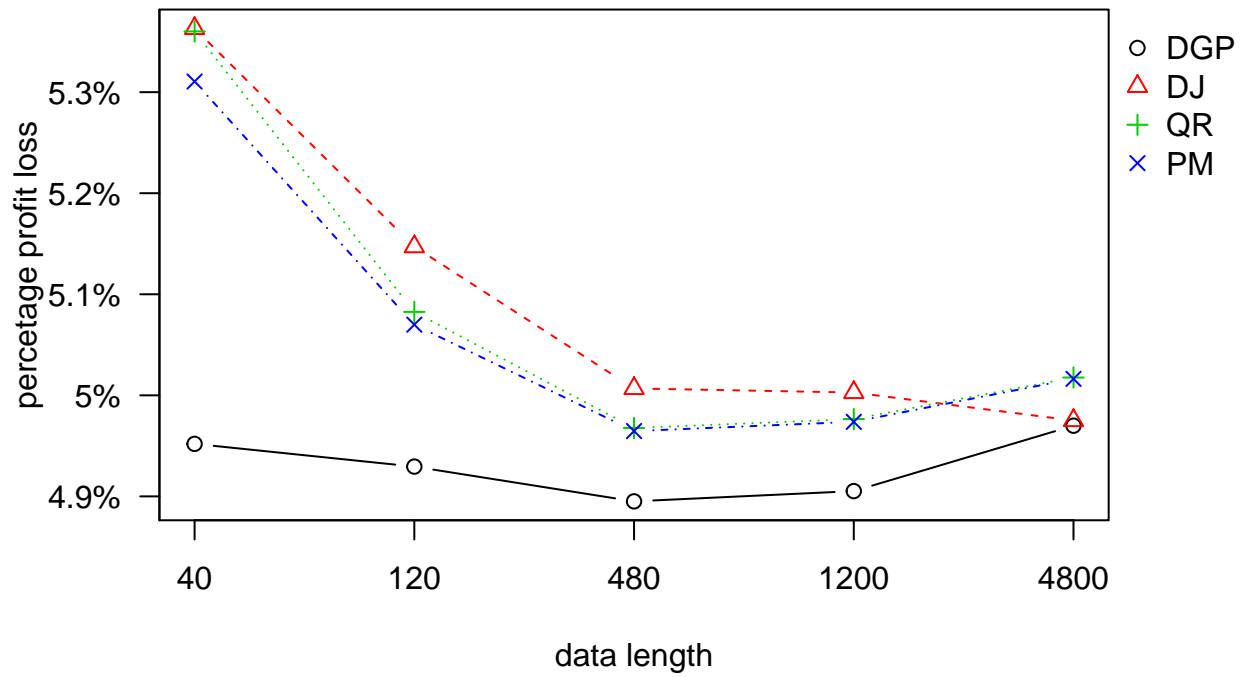# linear norm plot

Joshua

15/05/2020
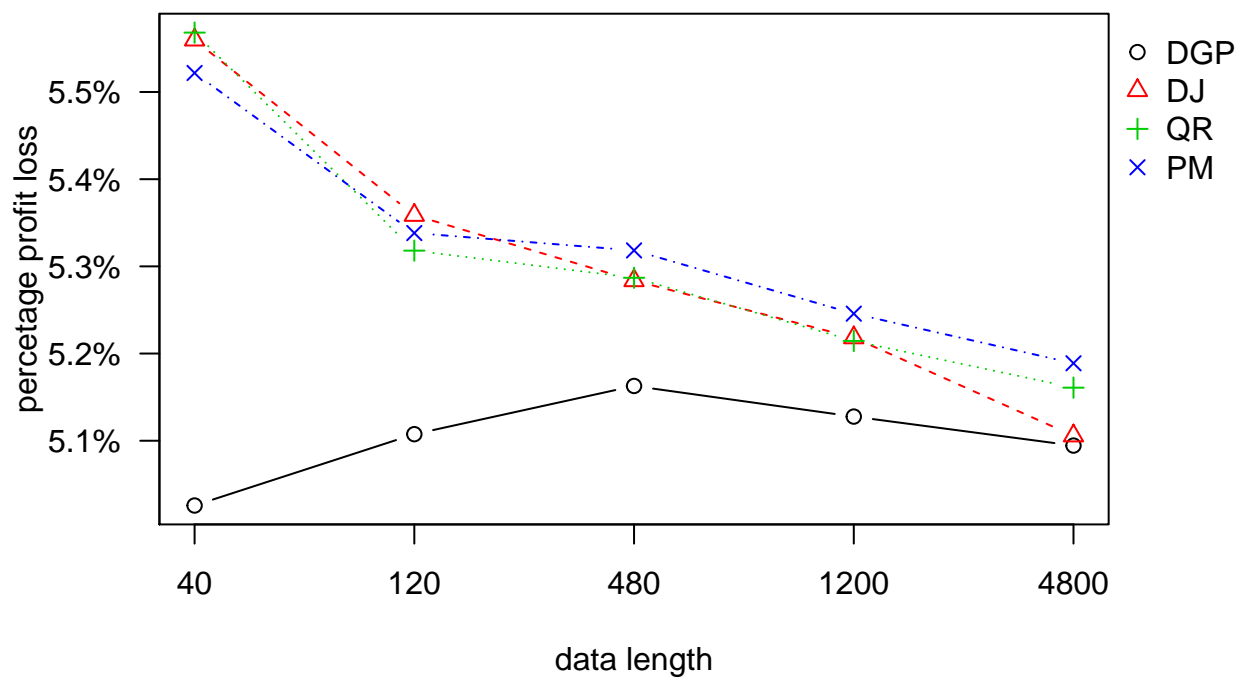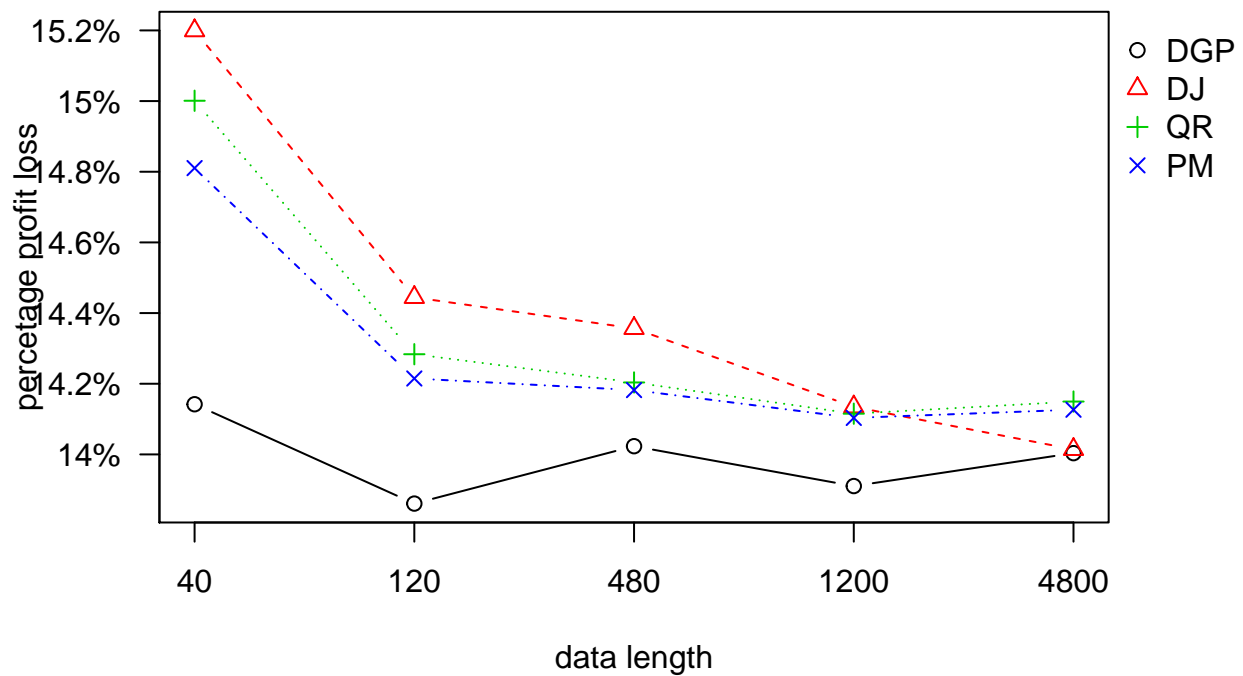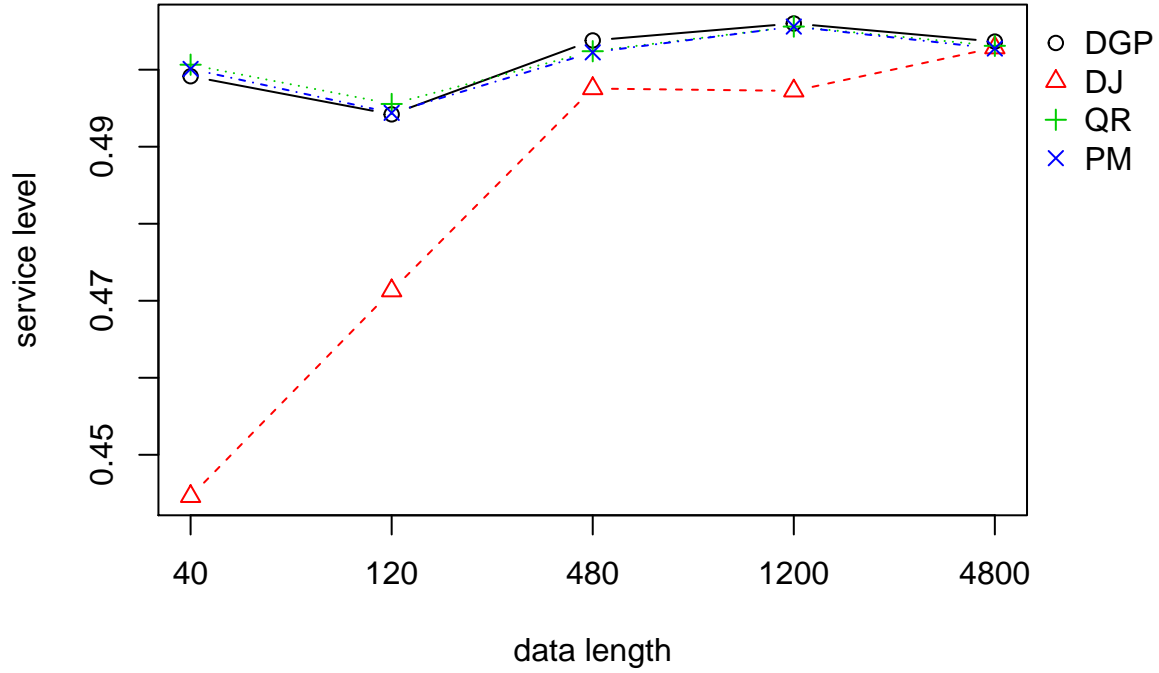
Table 1: Inventory Error

Data size	Target service level=0.5				Target service level=0.63				Target service level=0.3			
	DGP	disjoint	quantile	proposed	DGP	disjoint	quantile	proposed	DGP	disjoint	quantile	proposed
40	-1.61	29.56	-1.27	-1.46	-88.75	-46.19	-69.28	-66.68	134.22	149.11	104.67	102.89
	(200.74)	(221.15)	(218.1)	(215.86)	(200.02)	(222.48)	(216.76)	(214.36)	(198.14)	(220.03)	(216.95)	(214.71)
120	2.29	14.11	2.11	2.22	-75.26	-62.02	-69.67	-68.33	114.94	126.39	106.52	104.91
	(201.06)	(211.95)	(207.78)	(207.27)	(197.67)	(209.4)	(205.24)	(204.46)	(200.09)	(211.08)	(206.96)	(206.94)
480	-0.05	2.36	0.59	0.63	-70.29	-68.27	-69.02	-67.84	106.91	111.53	105.2	103.62
	(199.95)	(205.52)	(203.03)	(202.91)	(201.47)	(207.77)	(204.22)	(204.3)	(201.05)	(206.74)	(204.7)	(205.03)
1200	-2.1	-0.47	-2.03	-2.02	-68.94	-67.98	-68.87	-67.75	106.83	110.18	106.81	105.2
	(199.53)	(204.15)	(202.15)	(202.03)	(200.43)	(204.5)	(203.53)	(203.75)	(199.27)	(203.69)	(202.08)	(202.58)
4800	-1.88	-1.51	-1.87	-1.9	-66.43	-65.99	-66.96	-65.77	107.34	107.88	108.2	106.74
	(200.87)	(201.26)	(203.03)	(202.99)	(200.98)	(201.31)	(203.17)	(203.26)	(198.92)	(199.41)	(201.5)	(201.94)
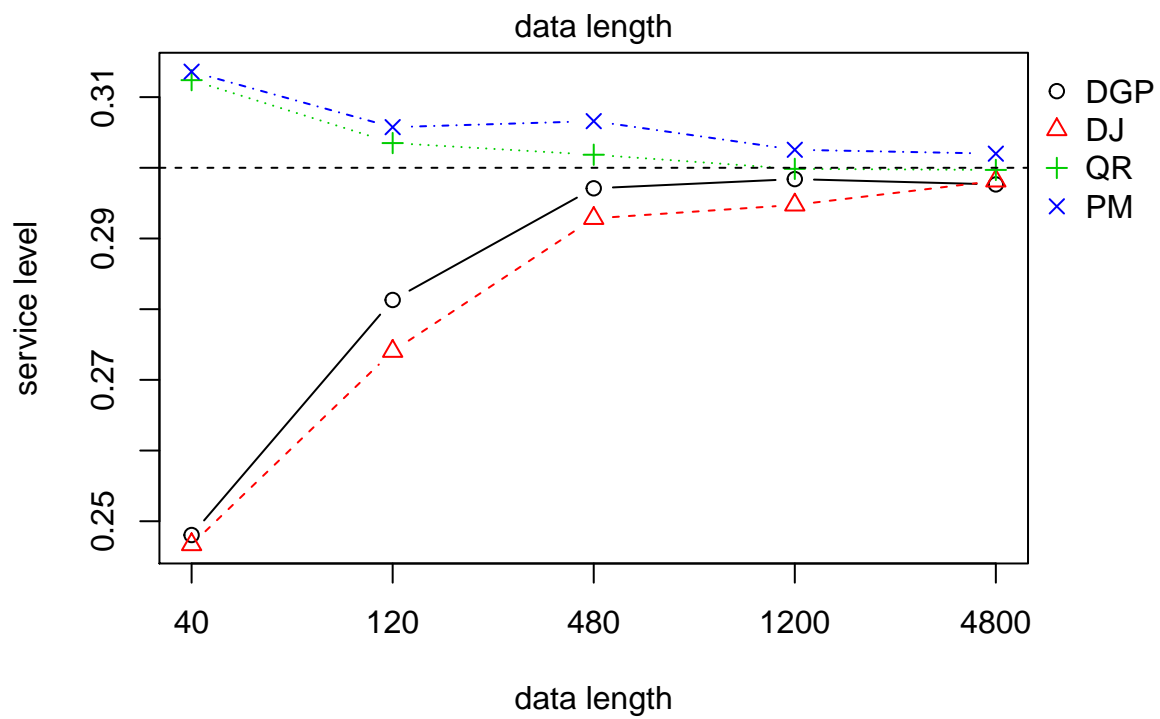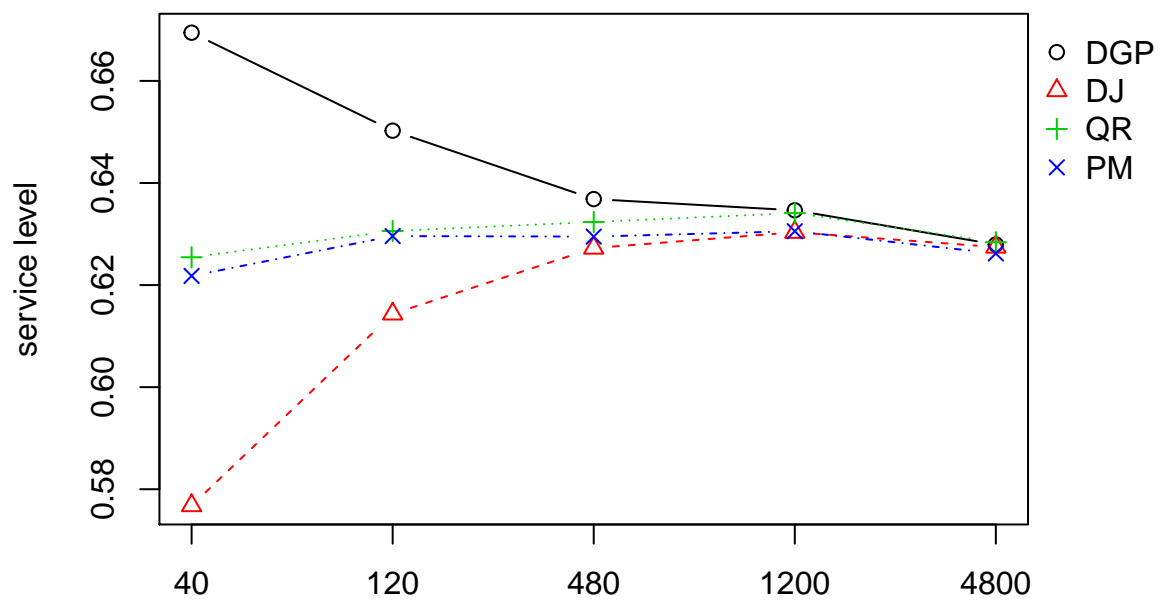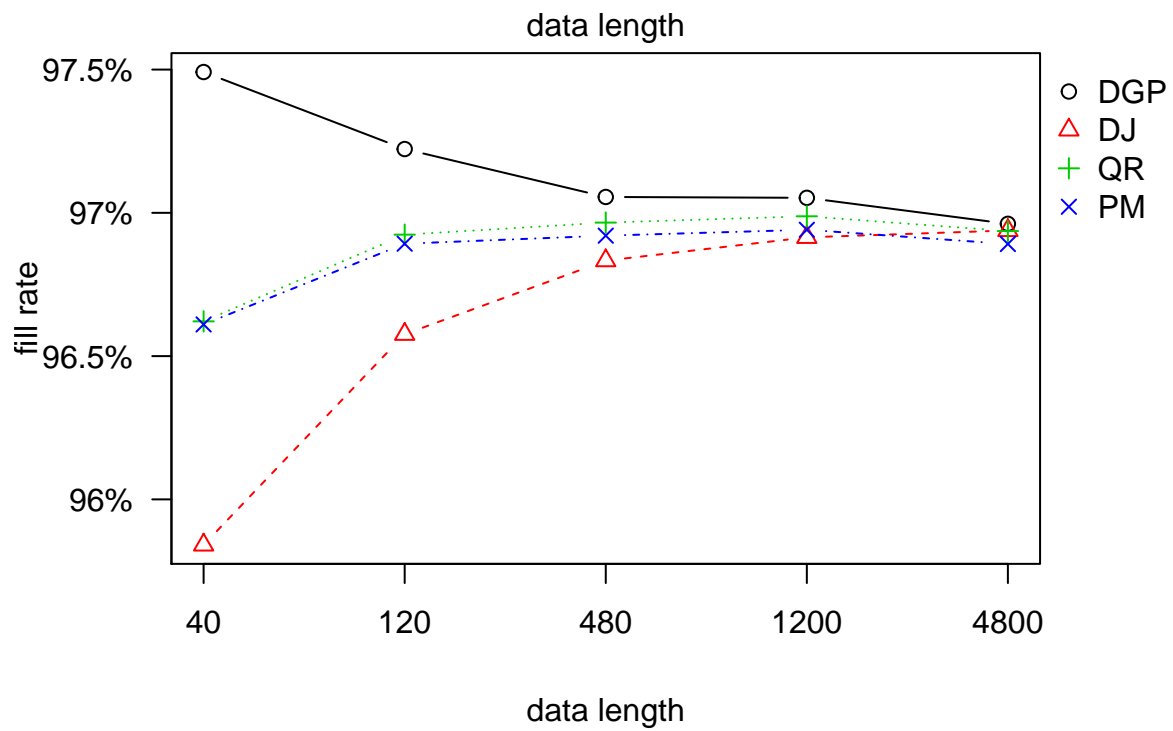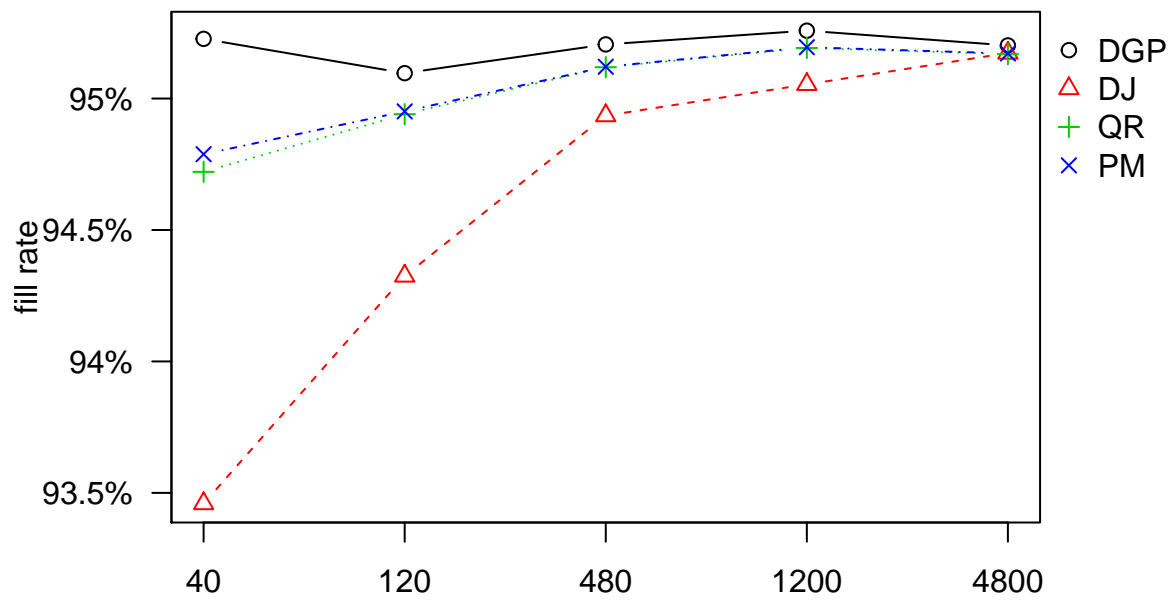
Table 2: p-value of Wilcoxon Test between data size 1200 and 4800

Target service level	DGP	disjoint	quantile	proposed
0.5	0.6383439	0.2627199	0.6170665	0.5686694
0.63	0.1649179	0.5483178	0.2374379	0.3680330
0.3	0.8697539	0.4565893	0.9738829	0.9046732
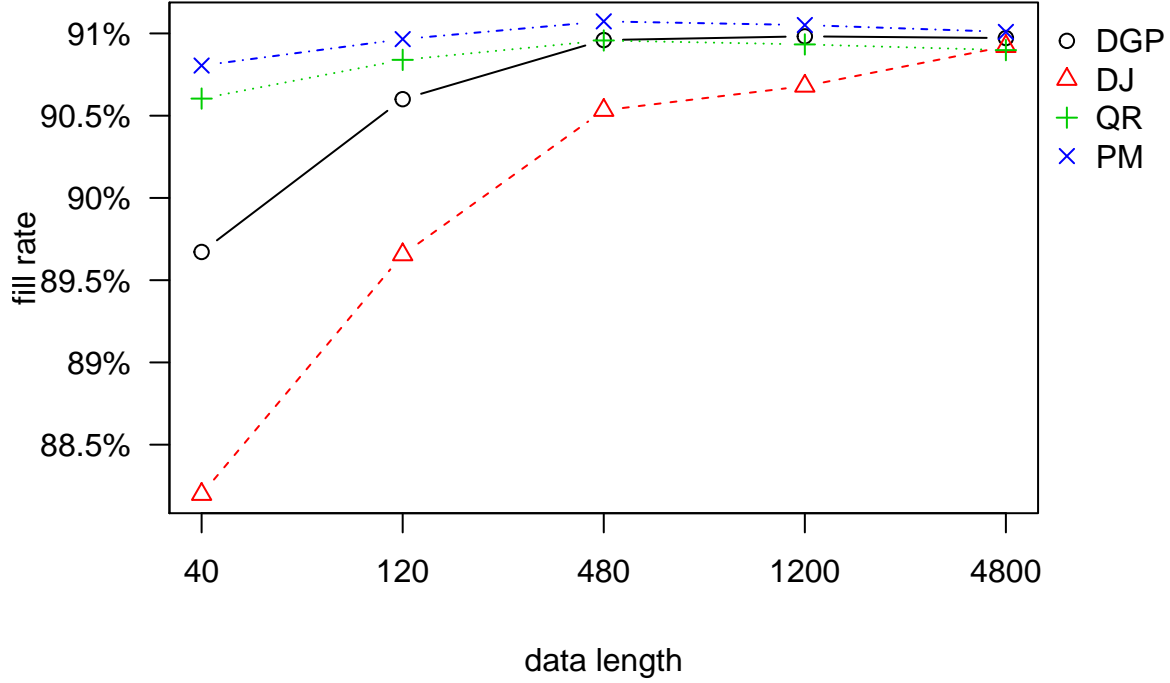
\begin{table}

\caption{Size effect (q=30%)}

Data size	Percentage profit loss				Service level				Fill rate			
	DGP	disjoint	quantile	proposed	DGP	disjoint	quantile	proposed	DGP	disjoint	quantile	proposed
40	5.0%	5.6%	5.6%	5.5%	0.25	0.25	0.31	0.31	89.7%	88.2%	90.6%	90.8%
120	5.1%	5.4%	5.3%	5.3%	0.28	0.27	0.30	0.31	90.6%	89.7%	90.8%	91.0%
480	5.2%	5.3%	5.3%	5.3%	0.30	0.29	0.30	0.31	91.0%	90.5%	91.0%	91.1%
1200	5.1%	5.2%	5.2%	5.2%	0.30	0.29	0.30	0.30	91.0%	90.7%	90.9%	91.1%
4800	5.1%	5.1%	5.2%	5.2%	0.30	0.30	0.30	0.30	91.0%	90.9%	90.9%	91.0%

\end{table}

Target service level	Percentage profit loss				Service level				Fill rate			
	DGP	disjoint	quantile	proposed	DGP	disjoint	quantile	proposed	DGP	disjoint	quantile	proposed
0.5	5.0%	5.4%	5.4%	5.3%	0.50	0.44	0.50	0.50	95.2%	93.5%	94.7%	94.8%
0.63	14.1%	15.2%	15.0%	14.8%	0.67	0.58	0.63	0.62	97.5%	95.8%	96.6%	96.6%
0.3	5.0%	5.6%	5.6%	5.5%	0.25	0.25	0.31	0.31	89.7%	88.2%	90.6%	90.8%

Target service level	Percentage profit loss				Service level				Fill rate			
	DGP	disjoint	quantile	proposed	DGP	disjoint	quantile	proposed	DGP	disjoint	quantile	proposed
0.5	5.0%	5.0%	5.0%	5.0%	0.50	0.50	0.50	0.50	95.2%	95.2%	95.2%	95.2%
0.63	14.0%	14.0%	14.1%	14.1%	0.63	0.63	0.63	0.63	97.0%	96.9%	96.9%	96.9%
0.3	5.1%	5.1%	5.2%	5.2%	0.30	0.30	0.30	0.30	91.0%	90.9%	90.9%	91.0%

Table 3: Target service level effect (n=480)

Target service level	Percentage profit loss				Service level			
	DGP	disjoint	quantile	proposed	DGP	disjoint	quantile	proposed
0.5	4.9%	5.0%	5.0%	5.0%	0.50	0.50	0.50	0.50
0.63	14.0%	14.4%	14.2%	14.2%	0.64	0.63	0.63	0.63
0.3	5.2%	5.3%	5.3%	5.3%	0.30	0.29	0.30	0.31