Busywait		Version 1		Version 2	
		computation time	Execution time	Main thread computation time	Execution time
p=4, n=1,600,000		0.205467s	0.215s	0.003112s	0.005s
p=1, n=1,600,000		0.006992s	0.009s	0.009589s	0.016s
p=5	n=8000 (c)	0.540454s	36.547s		
	n=1,600,000 (f)			0.004074s	0.012s

Program execution time reported by the OS
Speedup of Version 1 4 1600,000 = 0.009/0.215 = 0.04186

Total computation time reported by the main thread
Speedup of Version 1 4 1600,000 = 0.006992/0.205467 = 0.034030

I think speedup calculated with total computation time reported by the main thread is more accurate estimate of speedup because it gives elapsed time of computation while program execution time reported by the OS is actual time to execute the program, broader than CPU time which is amount of time the program utilized CPU.

The (c) which is version 1 with p=5 and n=8000 is much longer than the (f) which is version 2 with p=5 and n=1,600,000.

Version 1 requires checking while loop condition in the for loop. Each iteration of for loop, CPU is utilized to check while loop condition. Meanwhile, version 2 checks while loop condition after all iterations of for loop. Therefore, version 2 requires significantly less CPU time than version 1.