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1 Question 1

1.1 Compute the welfare gains of removing the seasonal component from the stream of consumption separately for each degree of seasonality in Table 1.

Table 1: Welfare gain after deseasonalisation, g

	middle	high	low
g	-0.0085	-0.0418	-0.002

1.2 Compute the welfare gains of removing the nonseasonal consumption risk.

Table 2: Welfare gain after removing nonseasonal risk, g_median

	middle	high	low
g	0.0026	0.0026	0.0026

1.3 redo for eta = 2

Table 3: Welfare gain after deseasonalisation, g_median

	middle	high	low
g	-0.0227	-0.1300	-0.0051

Table 4: Welfare gain after removing nonseasonal risk, g_median

	middle	high	low
g	-0.6569	-0.6823	-0.6823

1.4   redo for eta = 4

Table 5: Welfare gain after deseasonalisation, g_median

	middle	high	low
g	-0.0920	-0.6488	-0.0190

Table 6: Welfare gain after removing nonseasonal risk, g_median

	middle	high	low
g	-0.4591	-0.7802	-0.4213

1.5   Compute the welfare gains of removing the seasonal component (all combinations of deterministic and stochastic) from the stream of consumption separately for each degree of seasonality in Table 1 and 2.

Table 7: Welfare gain after deseasonalisation, g

	middle	high	low
g	-0.1469	-0.3078	-0.0308

Table 8: Welfare gain after removing nonseasonal risk, g_median

	middle	high	low
g	-0.0887	-0.0887	-0.0887

1.6 redo for eta = 2

Table 9: Welfare gain after deseasonalisation, g

	middle	high	low
g	-0.5372	-0.7725	-0.3575

Table 10: Welfare gain after removing nonseasonal risk, g_median

	middle	high	low
g	-0.2833	-0.3598	-0.2449

1.7 redo for eta = 4

Table 11: Welfare gain after deseasonalisation, g

	middle	high	low
g	-0.9457	-1	-0.7214

Table 12: Welfare gain after removing nonseasonal risk, g_median

	middle	high	low
g	-0.9376	-1	-0.8223

2 Question 2

2.1 (a) Assume a deterministic seasonal component and a stochastic seasonal component for labor supply both of which are highly positively correlated with their consumption counterparts. Then, compute the welfare gains of removing seasons isolating the effects of consumption and leisure.

Table 13: Welfare gain after deseasonalisation, positive corr

		middle	high	low
Total effect	g(median)	0.1137	0.2438	0.0553
Consumption effect	g(median)	0.1137	0.2437	0.0553
Labour effect	g(median)	1.0e-03 *0.0339	1.0e-03 *0.0680	1.0e-03 *0.0222

2.2 Assume a deterministic seasonal component and a stochastic seasonal component for labor supply both of which are highly negatively correlated with their consumption counterparts. Then, compute the welfare gains of removing seasons isolating the effects of consumption and leisure.

Table 14: Welfare gain after deseasonalisation, positive corr

		middle	high	low
Total effect	g(median)	0.1156	0.2422	0.0546
Consumption effect	g(median)	0.1155	0.2420	0.0545
Labour effect	g(median)	1.0e-03 *0.0350	1.0e-03 *0.0695	1.0e-03 *0.0234

2.3 (c) How do your answers to (a) and (b) change if the nonseasonal stochastic component of consumption and leisure are correlated?

The results for part a and b are almost the same. This suggests that the positive (negative) correlation between seasonal consumption and the labour supply does not affect the welfare gain once we deseasonalise consumption and labour respectively.

Looking at the utility function given, consumption and labour supply could be separated. Given the lifetime utility is of linear format, we could then expect that correlation between consumption and labour supply should not matter a lot when we deseasonalise them. Our results confirm that this guess is correct.