Changes with observed prices and quantities until 2009 and then model estimates from 2010

I estimate the price and quantities with the additional costs to the model estimates. These are compared with the model estimates and the observed data[1]. After estimating prices, we correct for the share of the fed cattle meat and cull cow meat. That process will give us more precise estimates. Since we already have the future projected price, it is a okay to correct for the shares. I believe this is justified to do it. We also compute the percentage changes in the price and quantity for fed cattle, cull cows as well as the aggregate producer surplus. The results are as follows:

Table 1: Percentage change in price of fed cattle

Year	percentChange_ps_obs	percentChange_ps_model
2010	-2.058	6.547
2011	-12.339	3.668
2012	-1.357	2.506
2013	3.168	3.573
2014	-14.713	2.713
2015	9.744	3.476
2016	29.665	3.266

Table 2: Percentage change in quantity of fed cattle

Year	percentChange_sl_obs	percentChange_sl_model
2010	-1.749	-2.249
2011	-0.547	-0.890
2012	-3.257	-0.531
2013	-1.152	-1.446
2014	-3.352	-0.872
2015	-3.064	-2.283
2016	-0.660	-1.895

Table 3: Percentage change in price of cull cows

Year	percentChange_pc_obs	percentChange_pc_model
2010	-28.411	-4.600
2011	-24.199	1.021
2012	-11.938	1.659
2013	-3.749	-0.674
2014	-24.573	0.625
2015	-1.142	-1.701
2016	33.532	-1.203

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[1]Note: Since we are using model estimates to project prices I believe we have to compare them with the same model estimates. For instance, model estimates at t shoud be used to get new estimates for t with added costs.

Table 4: Percentage change in quantity of cull cows

Year	percentChange_cl_obs	percentChange_cl_model
2010	16.893	17.571
2011	16.423	6.657
2012	12.124	3.673
2013	1.868	11.126
2014	21.826	6.253
2015	30.512	15.588
2016	26.235	13.214

Table 5: Aggregate producer surplus

Year	diffRevCost_t_obs	diffRevCost_t_model
2010	-1.8032	0.2071
2011	-4.3611	-0.0485
2012	-2.0766	-0.1489
2013	-0.2600	0.0755
2014	-6.8125	-0.0631
2015	2.0609	0.0895
2016	7.7899	0.0702

Changes with observed holding costs until 2009 and model holding costs with added costs from 2010 onwards. Observed fed cattle, cull cow prices, and quantities from begining to end.

Table 6: Percentage change in price of fed cattle

Year	percentChange_ps_obs	percentChange_ps_model
2010	-5.913	2.353
2011	-14.319	1.326
2012	-3.081	0.714
2013	0.775	1.170
2014	-15.896	1.289
2015	6.274	0.204

Table 7: Percentage change in quantity of fed cattle

Year	percentChange_sl_obs	percentChange_sl_model
2010	-1.749	-2.249
2011	-0.547	-0.890
2012	-3.257	-0.531
2013	-1.152	-1.446
2014	-3.352	-0.872
2015	-3.065	-2.283

Table 8: Percentage change in price of cull cows

Year	percentChange_pc_obs	percentChange_pc_model
2010	-21.130	5.102
2011	-23.129	2.446
2012	-12.344	1.190
2013	-1.306	1.846
2014	-23.516	2.036
2015	0.879	0.308

Table 9: Percentage change in quantity of cull cows

Year	percentChange_cl_obs	percentChange_cl_model
2010	16.893	17.571
2011	16.423	6.657
2012	12.124	3.673
2013	1.868	11.126
2014	21.826	6.253
2015	30.514	15.589

Table 10: Aggregate producer surplus

Year	diffRevCost_t_obs	diffRevCost_t_model
2010	-2.4758	-0.4655
2011	-4.8548	-0.5422
2012	-2.5543	-0.6266
2013	-0.8415	-0.5060
2014	-7.1600	-0.4106
2015	1.1181	-0.8533