

FMD Simulations

09-05-2022

Optimistic Scenario:

- Year1: 5% decline in domestic demand and exports are banned
- Year2: Domestic demand is back up and exports are banned
- Year3: Everything goes back to pre FMD

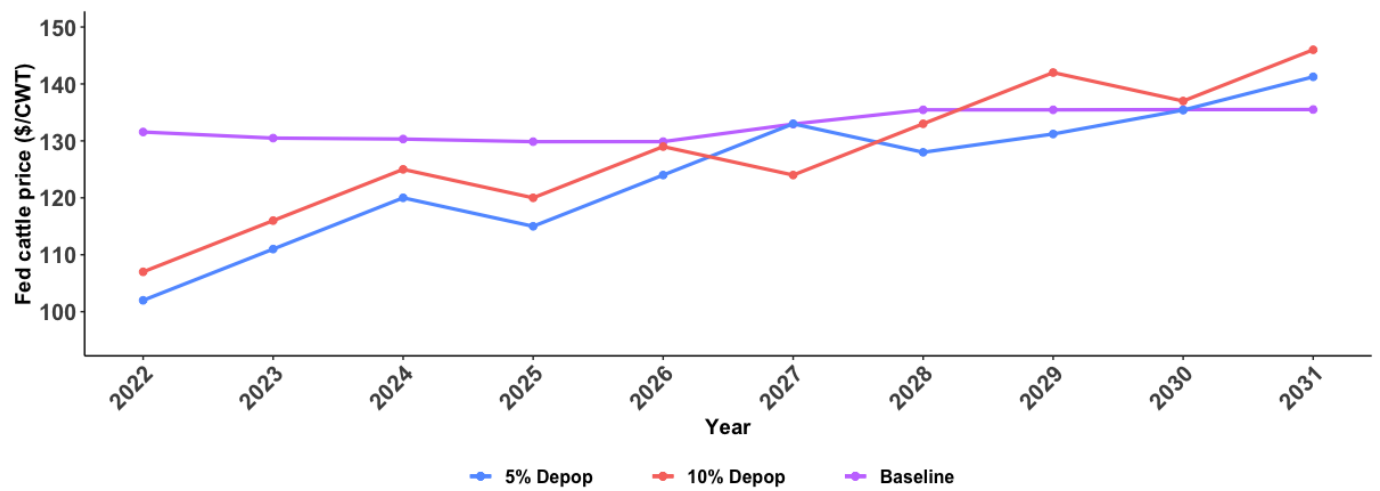


Figure 1: Fed cattle price

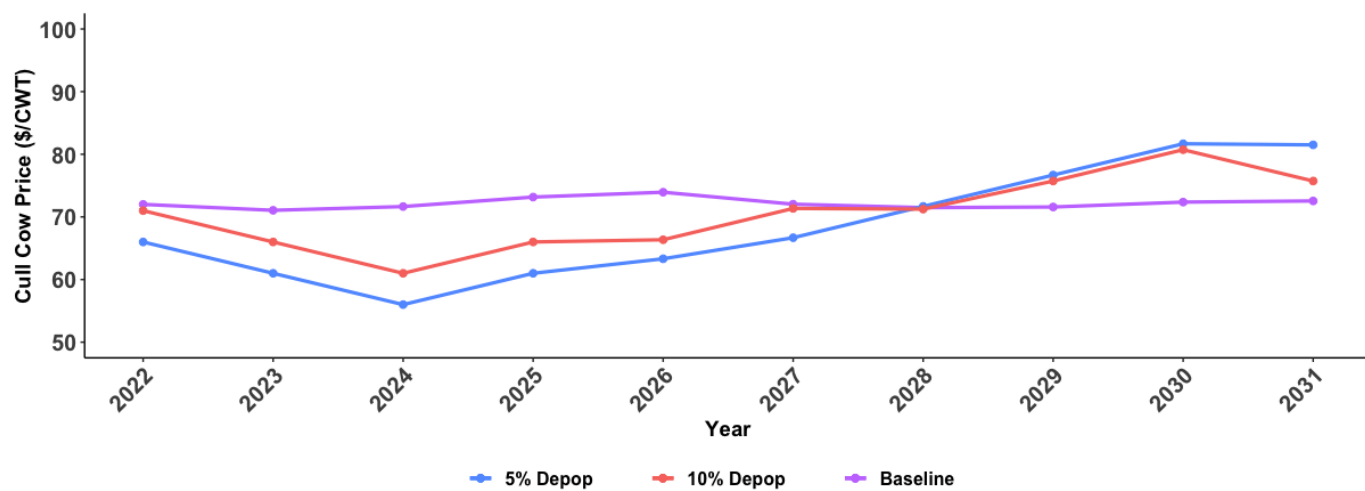


Figure 2: Cull cow price

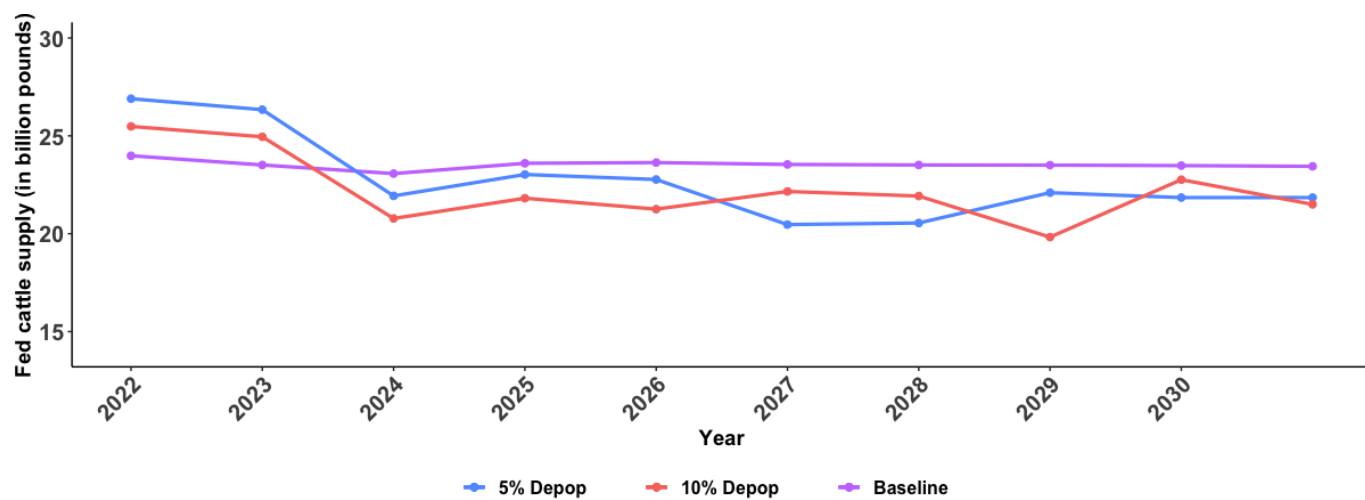


Figure 3: Fed Cattle Supply - After adjusting for exports and imports

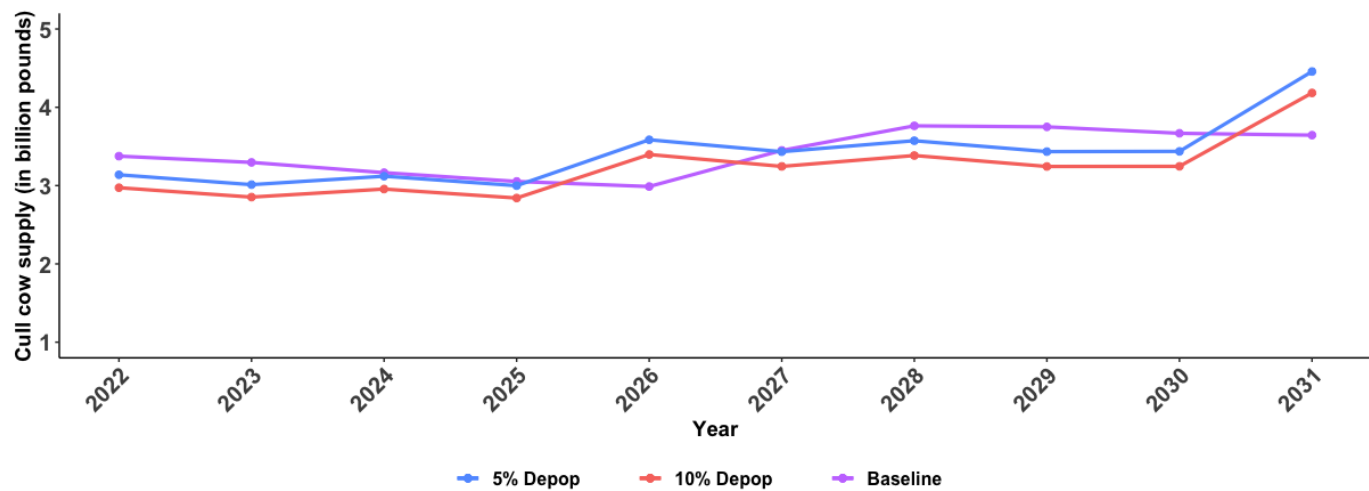


Figure 4: Cull cow supply - After adjusting for exports and imports

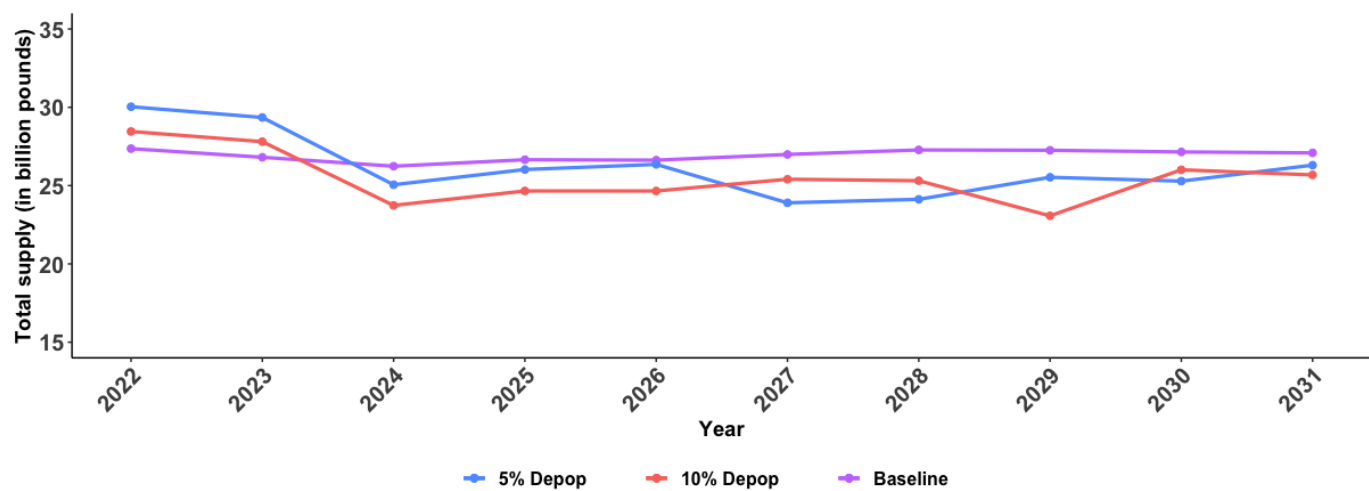


Figure 5: Total Supply - After adjusting for exports and imports

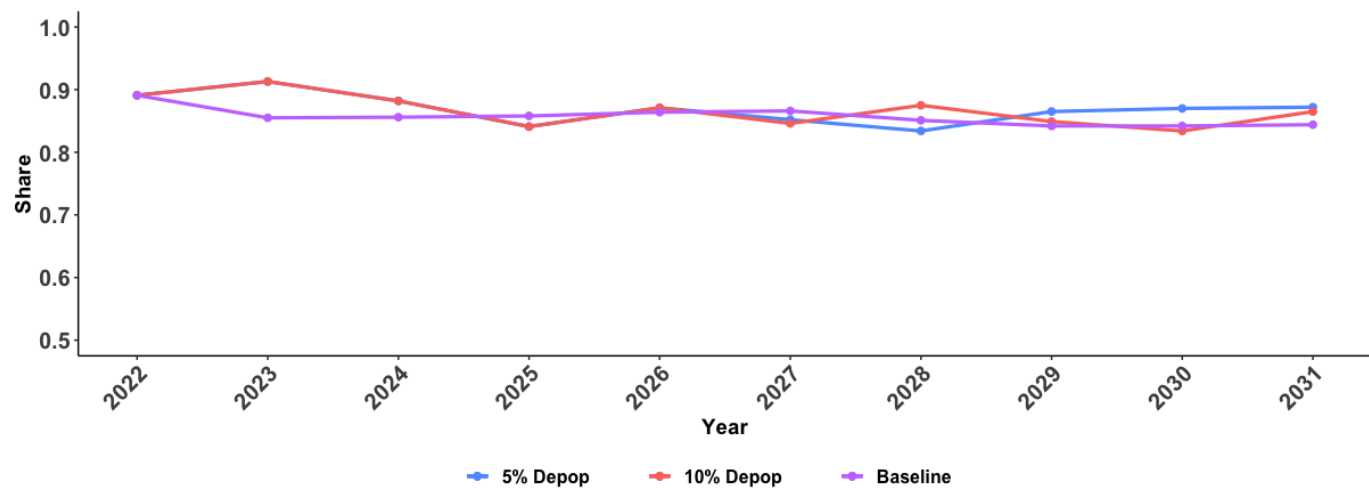


Figure 6: Share

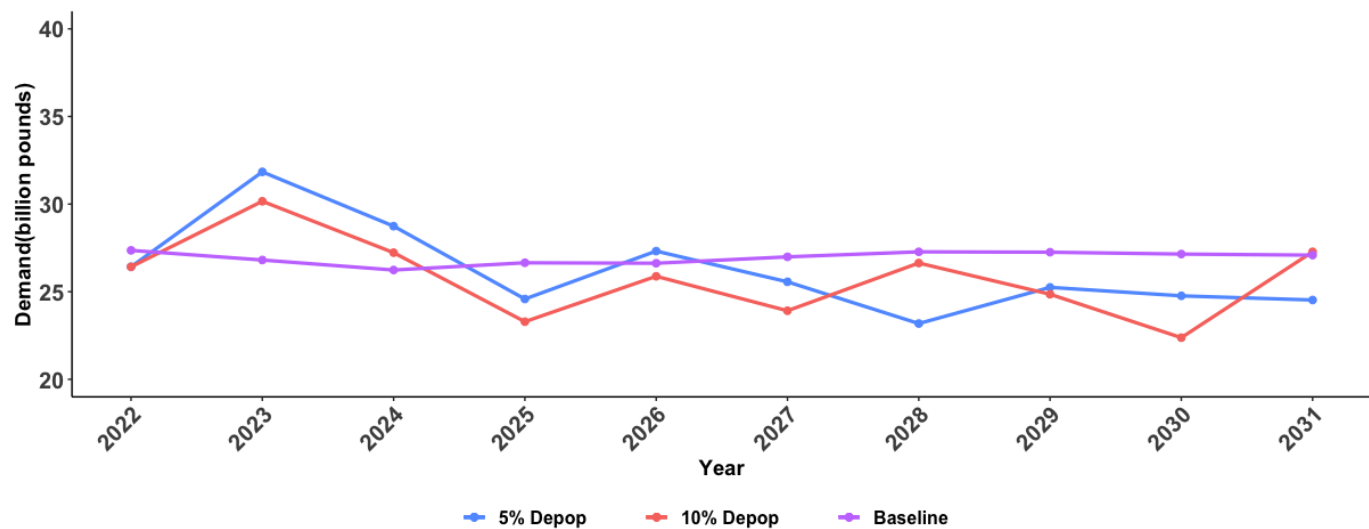


Figure 7: Demand(Quantity)

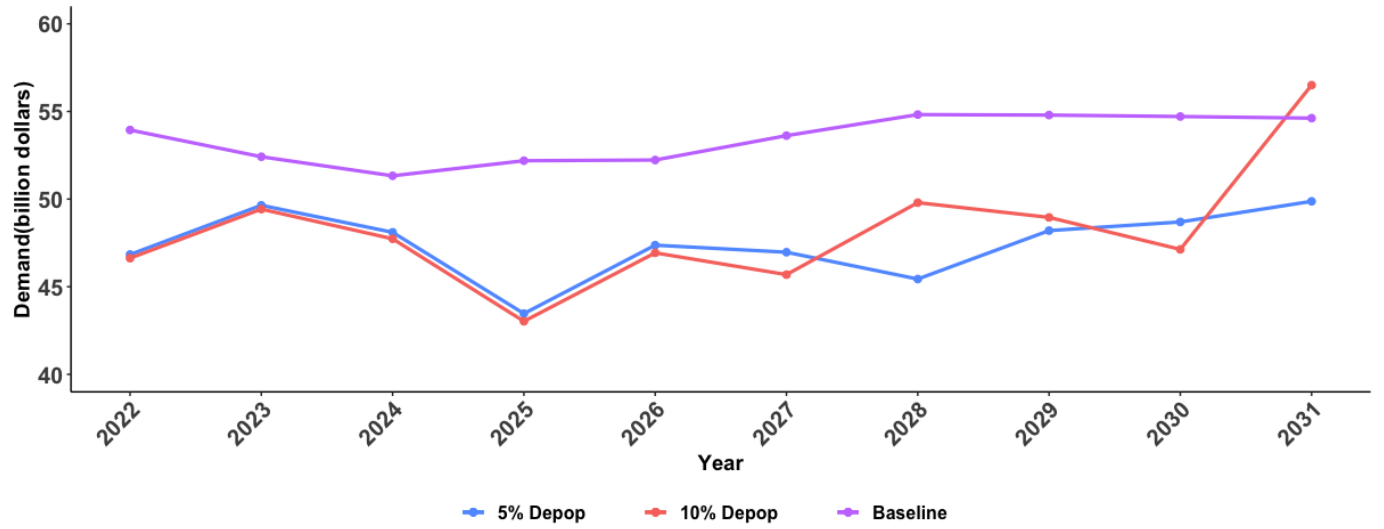


Figure 8: Demand(Dollars)

Year	K	k3	k4	k5	k6	k7	k8	k9	k10
2022	29995052	6907361	5242532	5045566	4975167	4923723	0	0	0
2023	30110117	6613406	6561993	4980406	4793288	4726409	4677537	0	0
2024	30322955	6716931	6282736	6233893	4731385	4553623	4490088	4443660	0
2025	30371581	6563361	6381085	5968599	5922199	4494816	4325942	4265584	0
2026	28805283	4950869	6235193	6062030	5670169	5626089	4270075	4109645	0
2027	30954130	8587699	4703326	5923433	5758929	5386660	5344784	4056572	0
2028	32164972	7757136	8158314	4468159	5627262	5470982	5117327	5077545	0
2029	34532434	8974299	7369279	7750398	4244751	5345899	5197433	4861461	0
2030	36311798	8504573	8525584	7000815	7362878	4032514	5078604	4937562	0
2031	37734522	8236902	8079345	8099305	6650774	6994734	0	0	0

Figure 9: Inventory distribution under 5% percent depopulation

Year	K	k3	k4	k5	k6	k7	k8	k9	k10
2022	28416365	6543816	4966610	4780010	4713316	4664580	0	0	0
2023	28248554	6251595	6216625	4718279	4541010	4477650	4431351	0	0
2024	28187959	6350420	5939016	5905794	4482365	4313959	4253768	4209783	0
2025	27894503	6114529	6032899	5642065	5610504	4258247	4098261	4041079	0
2026	26158697	4657508	5808803	5731254	5359962	5329979	4045334	3893348	0
2027	27910380	8058206	4424632	5518363	5444692	5091964	5063480	3843068	0
2028	27799663	6283389	7655295	4203401	5242444	5172457	4837365	4810306	0
2029	30499271	9088180	5969220	7272530	3993230	4980322	4913834	4595497	0
2030	32878030	8902310	8633771	5670759	6908904	3793569	4731306	4668142	0
2031	36771941	10536400	8457194	8202082	5387221	6563459	0	0	0

Figure 10: Inventory distribution under 10% percent depopulation

Year	imports	exports	importsBeef	exportsBeef
2022	0	0	0.00	0.000
2023	0	0	0.00	0.000
2024	0	610804	0.00	1.210
2025	0	611741	0.00	1.262
2026	2345694	502195	0.00	1.283
2027	0	620681	0.00	1.163
2028	0	642249	0.00	1.170
2029	0	589537	3.29	1.081
2030	0	620112	0.00	1.191
2031	0	644527	0.00	1.279

Figure 11: Imports and Exports under 5% percent depopulation

Year	imports	exports	importsBeef	exportsBeef
2022	0	0	0.00	0.000
2023	0	0	0.00	0.000
2024	0	467091	0.00	1.147
2025	0	466089	0.00	1.196
2026	2130175	461237	0.00	1.200
2027	0	568018	3.28	1.077
2028	0	567142	3.26	1.069
2029	0	612468	2.97	0.974
2030	0	561259	3.25	1.069
2031	0	627388	3.32	1.086

Figure 12: Imports and Exports under 10% percent depopulation

Pessimistic Scenario:

- Year1: 5% decline in domestic demand and exports are banned
- Year2: 5% decline in domestic demand and exports are banned
- Year3: 5% decline in domestic demand and exports are banned
- Year4: Domestic demand goes back up, exports are still banned
- Year5: Exports are still banned
- Year6: Export band is lifted and everything goes back to pre FMD

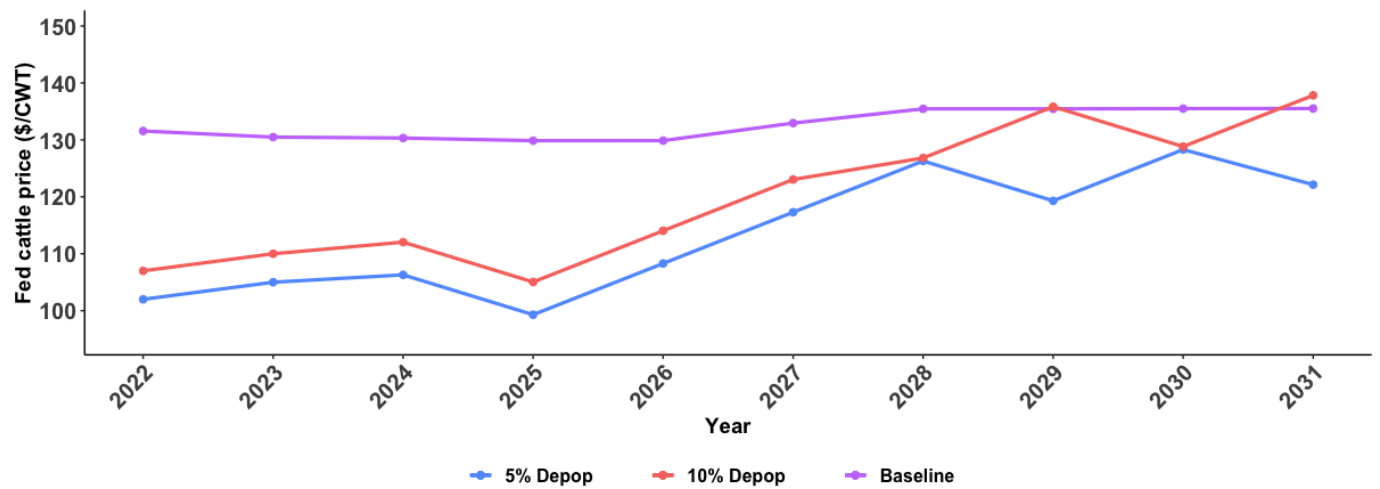


Figure 13: Fed cattle price

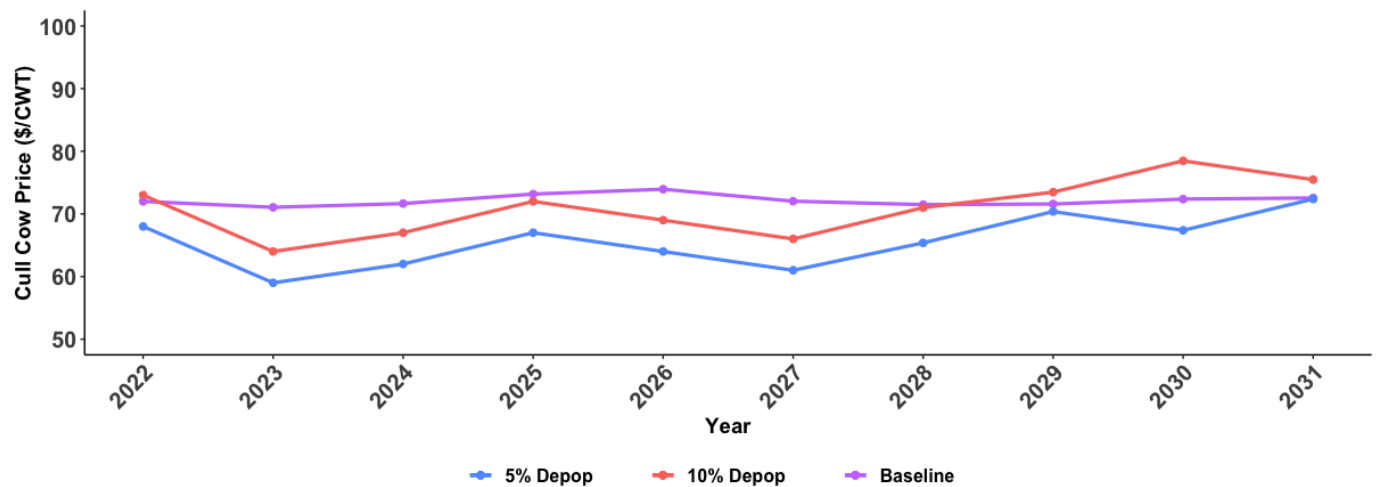


Figure 14: Cull cow price

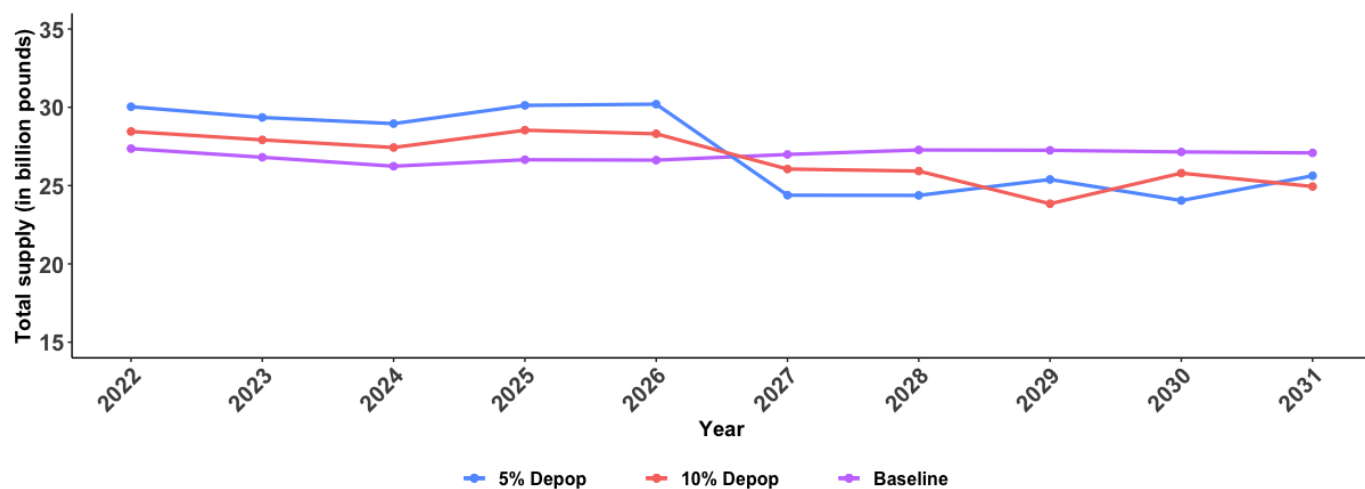


Figure 15: Total Supply - After adjusting for exports and imports

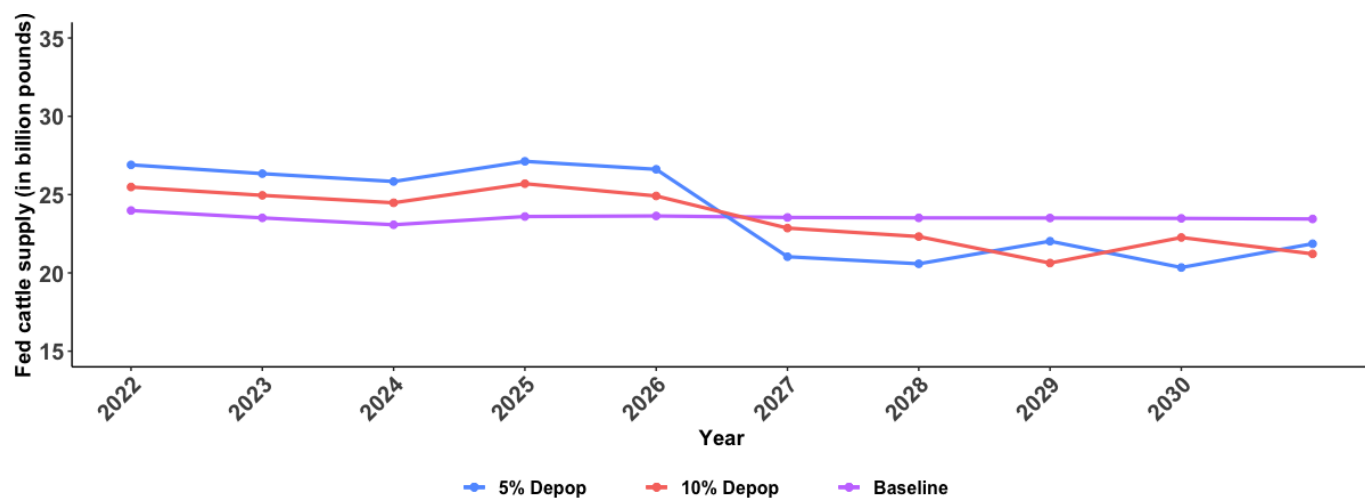


Figure 16: Fed Cattle Supply - After adjusting for exports and imports

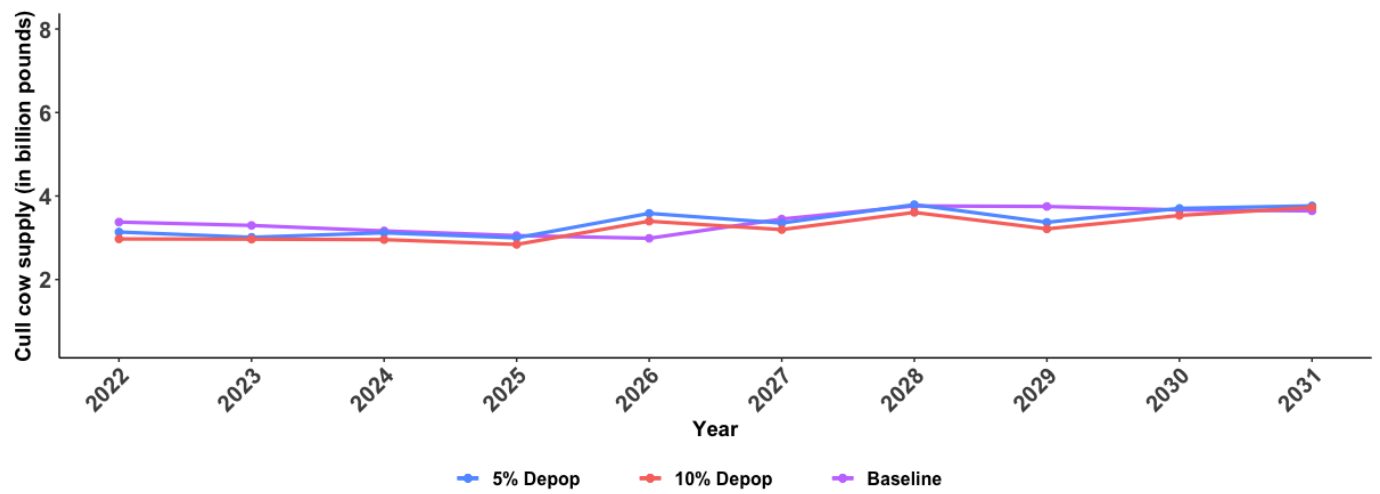


Figure 17: Cull cow supply - After adjusting for exports and imports

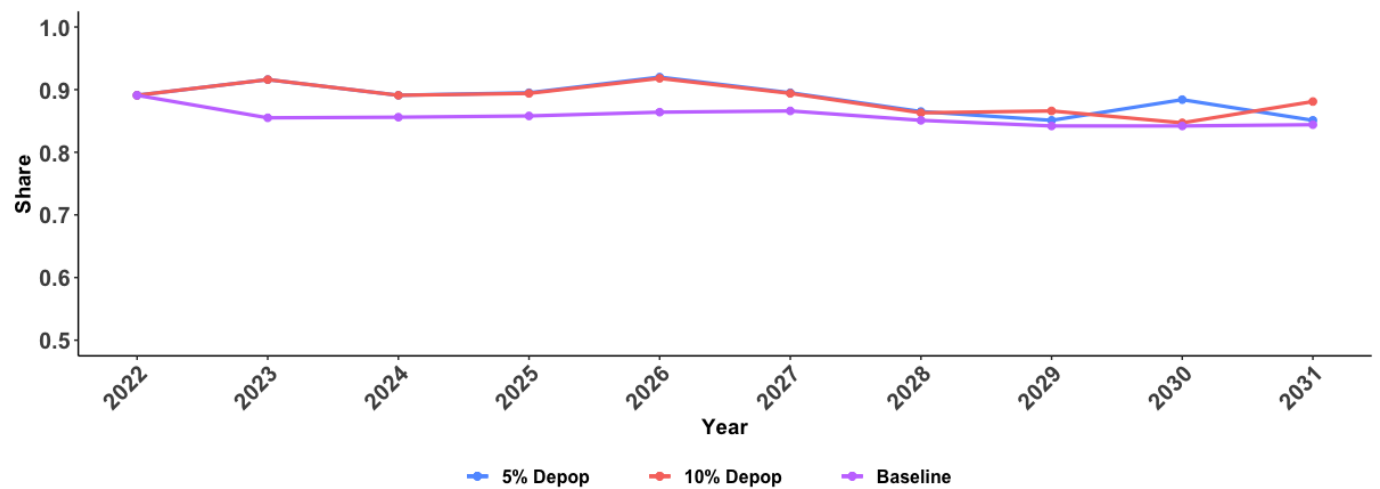


Figure 18: Share

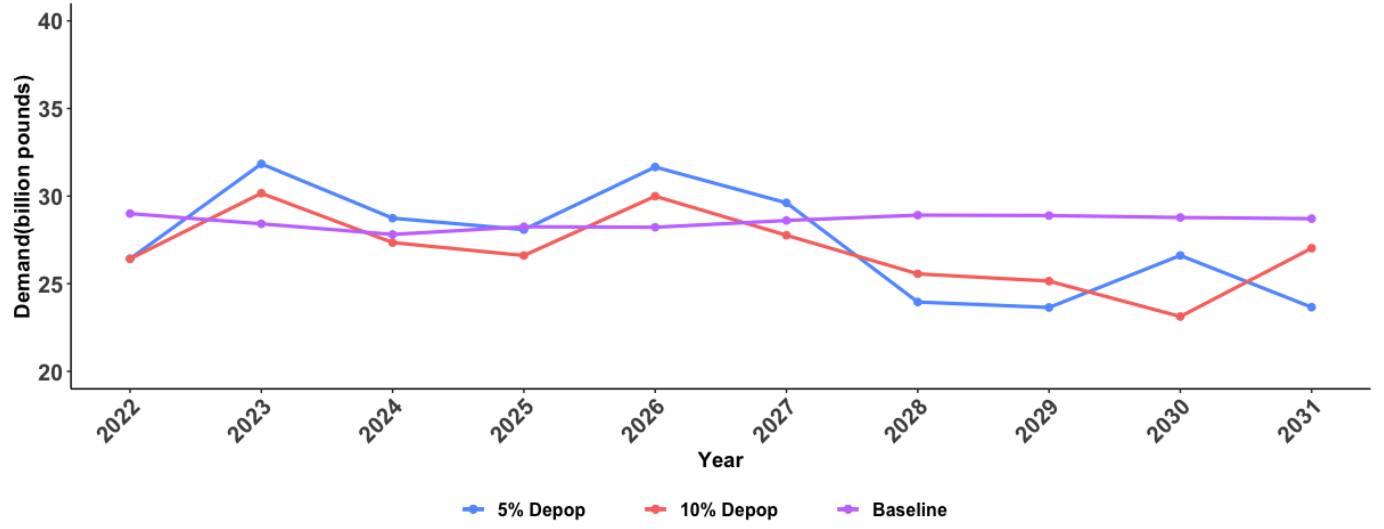


Figure 19: Demand(Quantity)

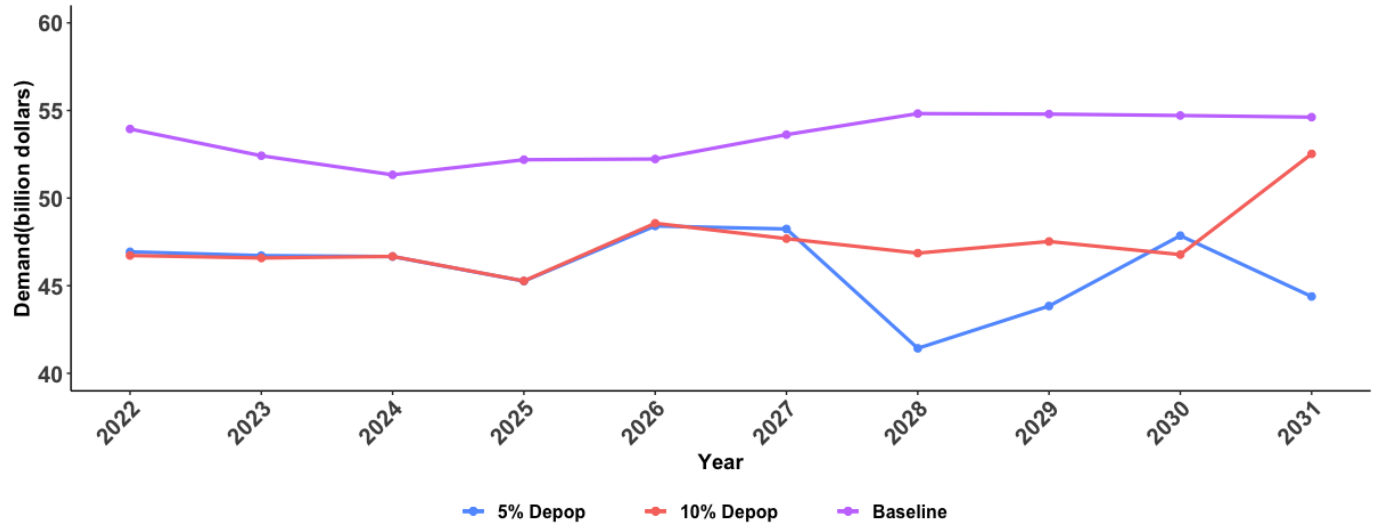


Figure 20: Demand(Dollars)

Year	K	k3	k4	k5	k6	k7	k8	k9	k10
2022	29995052	6907361	5242532	5045566	4975167	4923723	0	0	0
2023	29955762	6459050	6561993	4980406	4793288	4726409	4677537	0	0
2024	30768016	7308630	6136098	6233893	4731385	4553623	4490088	4443660	0
2025	30545566	6314539	6943199	5829293	5922199	4494816	4325942	4265584	0
2026	28820204	4800504	5998812	6596039	5537828	5626089	4270075	4109645	0
2027	29634904	7254298	4560479	5698871	6266237	5260937	5344784	4056572	0
2028	28847567	5692996	6891583	4332455	5413927	5952925	4997890	5077545	0
2029	29608768	7202167	5408347	6547004	4115832	5143231	5655279	4747995	0
2030	28708731	5578989	6842058	5137929	6219653	3910041	4886070	5372515	0
2031	31165079	8890372	5300040	6499955	4881033	5908671	3714539	4641766	0

Figure 21: Inventory distribution under 5% percent depopulation

Year	K	k3	k4	k5	k6	k7	k8	k9	k10
2022	28416365	6543816	4966610	4780010	4713316	4664580	0	0	0
2023	28154270	6157311	6216625	4718279	4541010	4477650	4431351	0	0
2024	28698497	6950529	5849445	5905794	4482365	4313959	4253768	4209783	0
2025	28327719	6062734	6603002	5556973	5610504	4258247	4098261	4041079	0
2026	26918058	5005313	5759597	6272852	5279124	5329979	4045334	3893348	0
2027	27755032	7181464	4755047	5471618	5959210	5015168	5063480	3843068	0
2028	27590924	6222232	6822391	4517295	5198037	5661249	4764410	4810306	0
2029	29001715	7788924	5911120	6481272	4291430	4938135	5378187	4526189	0
2030	30893713	8340671	7399478	5615564	6157208	4076859	4691228	5109277	0
2031	32906822	8556383	7923638	7029504	5334786	5849348	3873016	4456667	0

Figure 22: Inventory distribution under 10% percent depopulation

Year	imports	exports	importsBeef	exportsBeef
2022	0	0	0.00	0.000
2023	0	0	0.00	0.000
2024	0	0	0.00	0.000
2025	0	0	0.00	0.000
2026	2346909	0	0.00	0.000
2027	0	598510	0.00	1.044
2028	0	490014	0.00	1.022
2029	0	598086	3.27	0.932
2030	2337832	489582	0.00	1.010
2031	0	624174	3.31	0.922

Figure 23: Imports and Exports under 5% percent depopulation

Year	imports	exports	importsBeef	exportsBeef
2022	0	0	0.00	0.000
2023	0	0	0.00	0.000
2024	0	0	0.00	0.000
2025	0	0	0.00	0.000
2026	2192012	0	0.00	0.000
2027	0	565833	3.36	0.968
2028	0	458930	3.35	0.943
2029	0	587172	3.07	0.874
2030	0	619776	3.21	0.947
2031	0	561852	3.22	0.895

Figure 24: Imports and Exports under 10% percent depopulation