

# FMD Simulations

09-01-2022

## 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

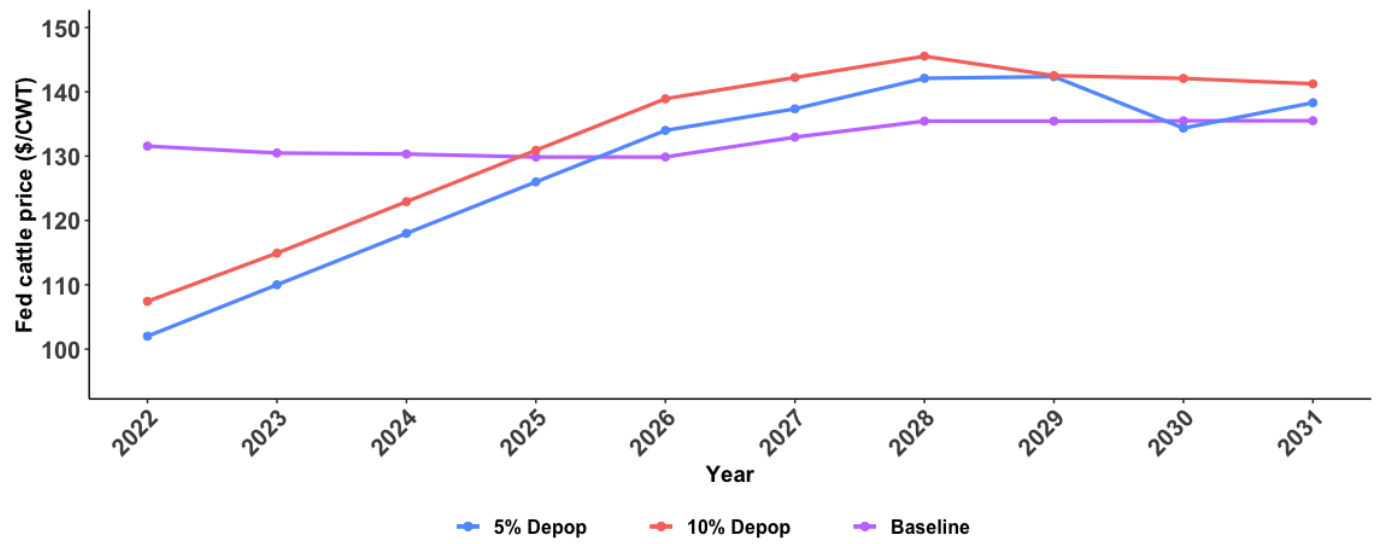


Figure 1: Fed cattle price

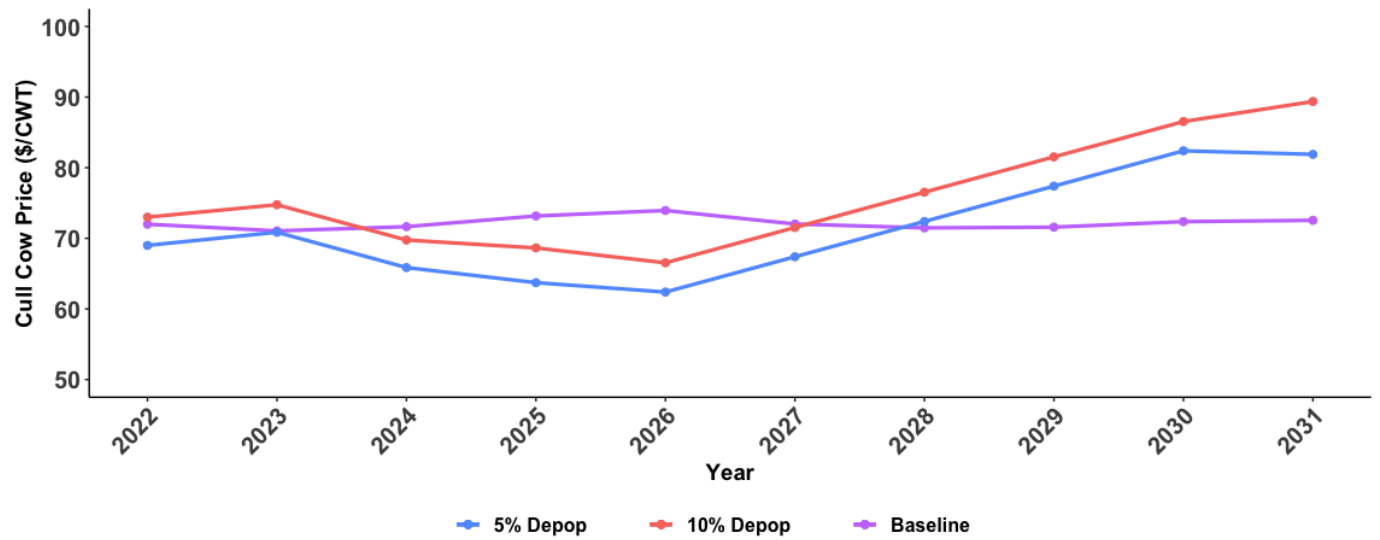


Figure 2: Cull cow price

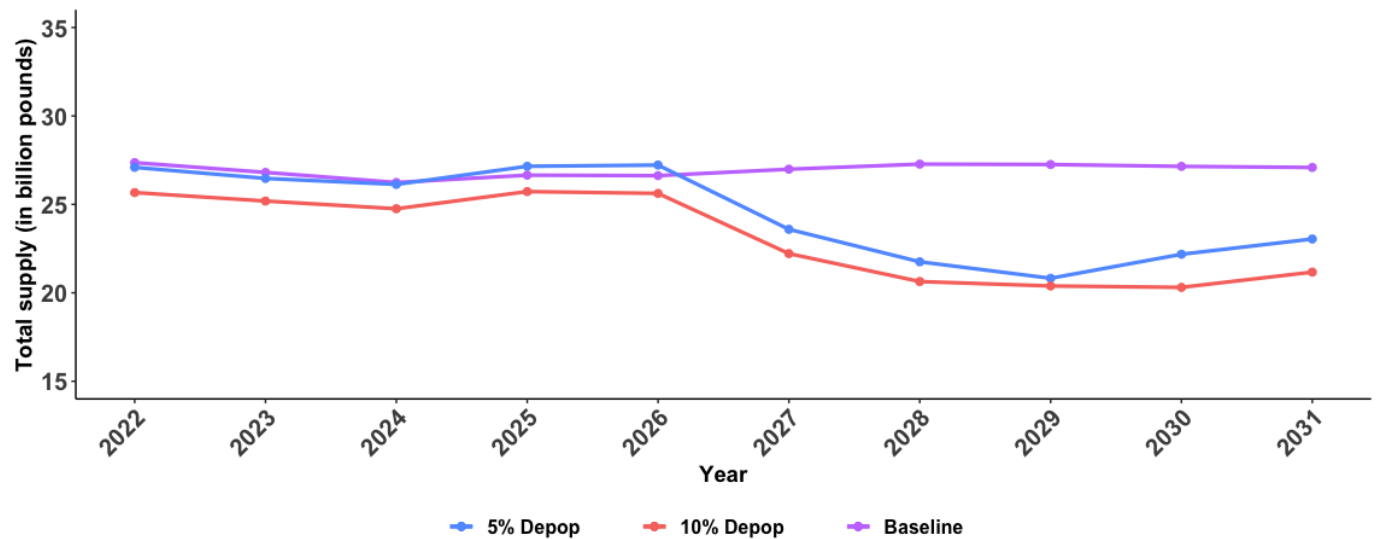


Figure 3: Total Supply - Before adjusting for exports and imports

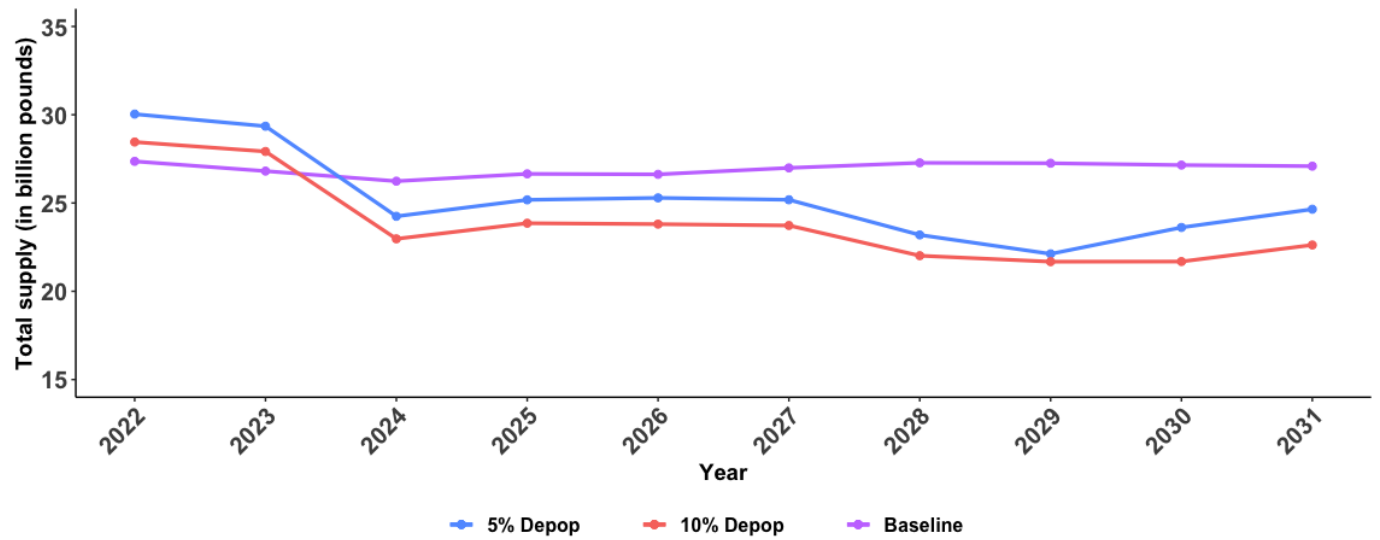


Figure 4: Total Supply - After adjusting for exports and imports

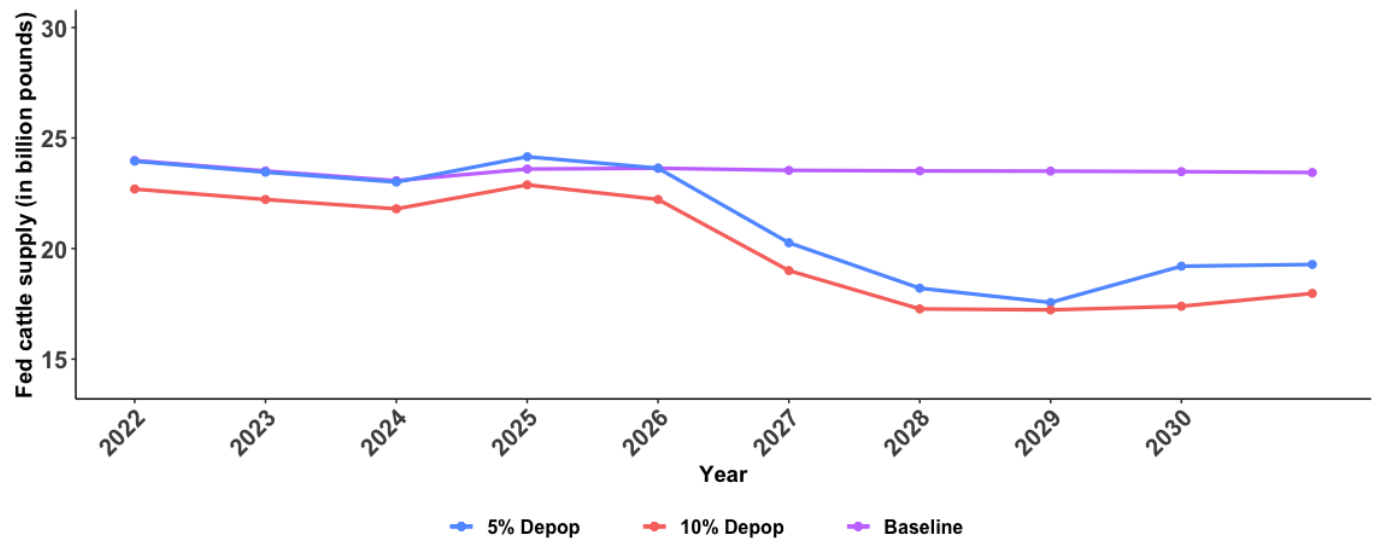


Figure 5: Fed Cattle Supply - Before adjusting for exports and imports

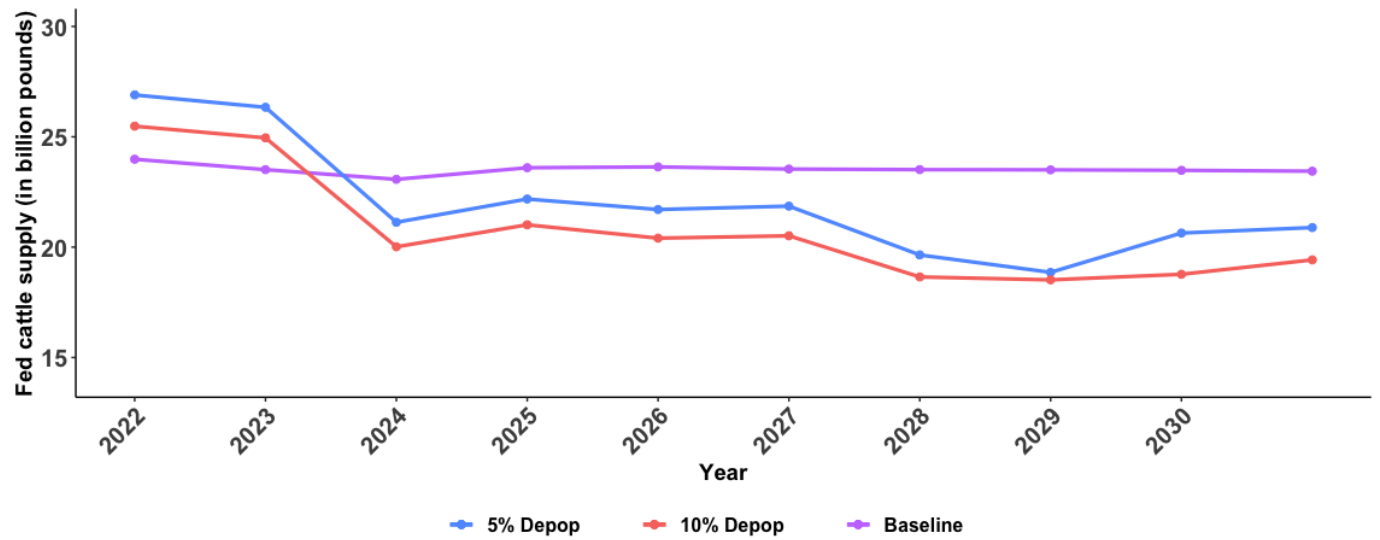


Figure 6: Fed Cattle Supply - After adjusting for exports and imports

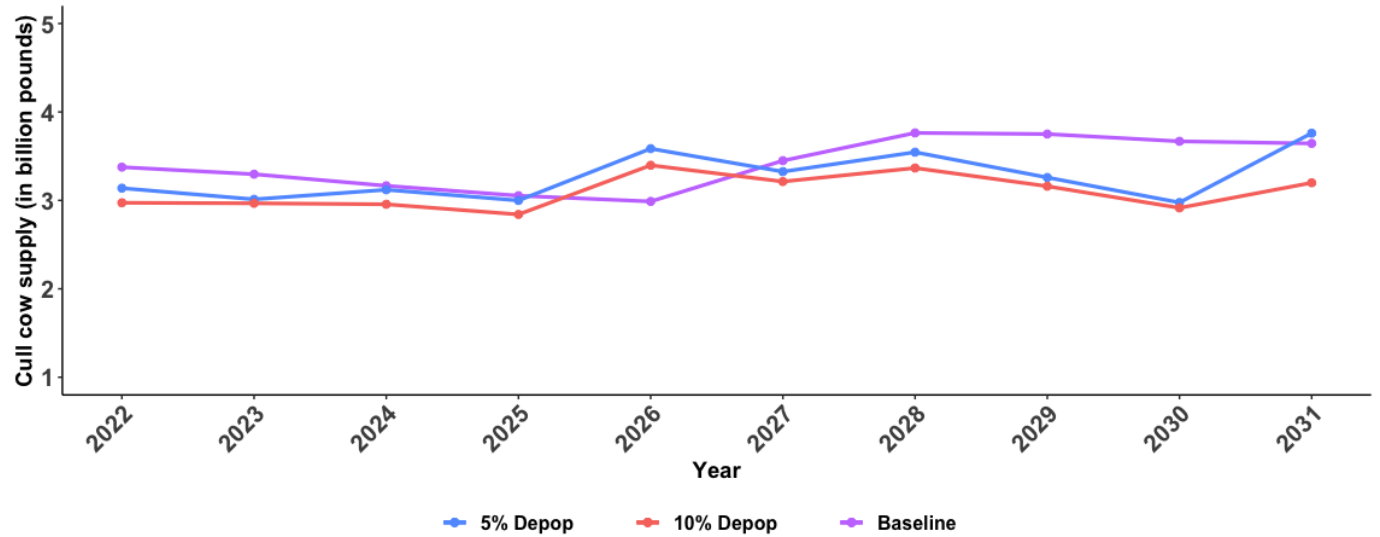


Figure 7: Cull cow supply - Before adjusting for exports and imports

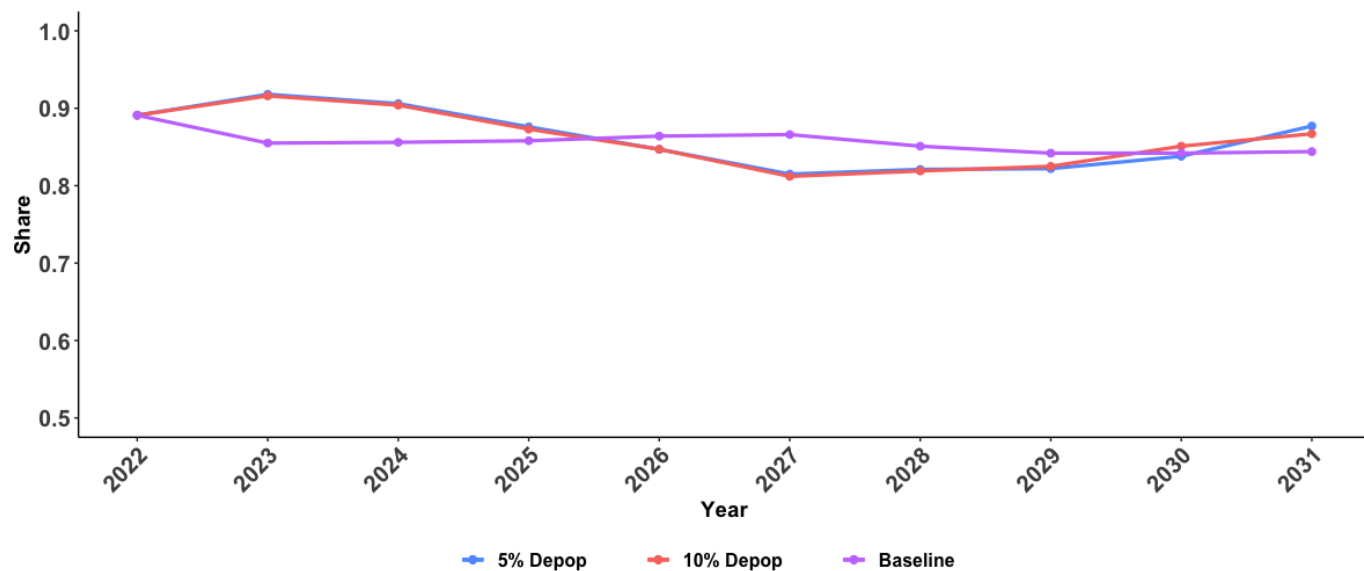


Figure 8: Share

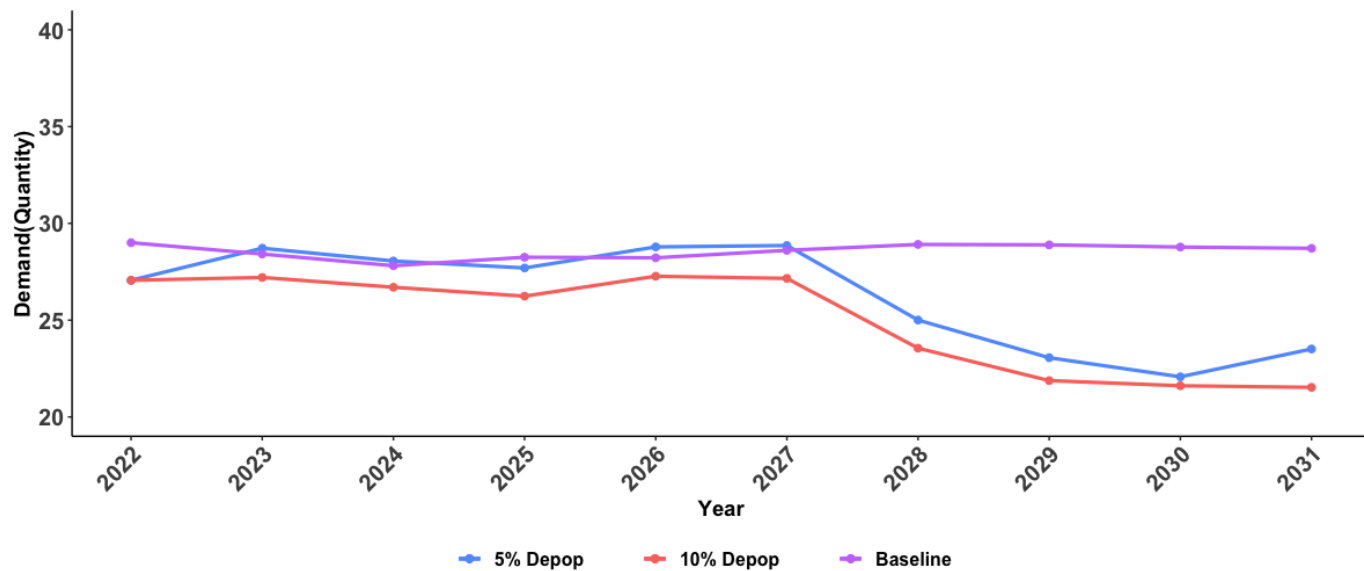


Figure 9: Demand(Quantity)

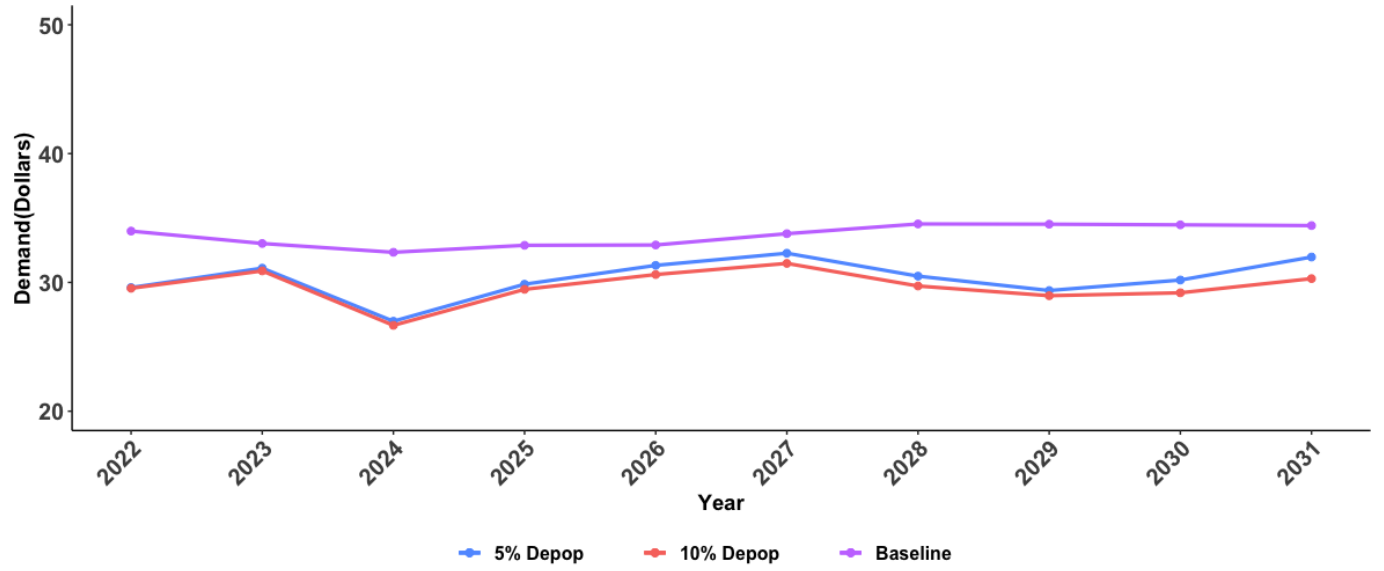


Figure 10: Demand(Dollars)

Year	K	k3	k4	k5	k6	k7	k8	k9	k10
2022	29995052	6907361	5242532	5045566	4975167	4923723	0	0	0
2023	29902163	6405452	6561993	4980406	4793288	4726409	4677537	0	0
2024	29245533	5837066	6085179	6233893	4731385	4553623	4490088	4443660	0
2025	27214489	4429820	5545213	5780920	5922199	4494816	4325942	4265584	0
2026	25954375	5099198	4208329	5267952	5491874	5626089	4270075	4109645	0
2027	26901224	7243155	4844238	3997912	5004554	5217281	5344784	4056572	0
2028	27765173	7207598	6880997	4602026	3798017	4754327	4956417	5077545	0
2029	30396752	9018426	6847218	6536948	4371925	3608116	4516610	4708596	0
2030	32902440	9024113	8567504	6504857	6210100	4153329	3427710	4290780	0
2031	34697198	8438468	8572908	8139129	6179614	5899595	0	0	0

Figure 11: 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	28186439	6189481	6216625	4718279	4541010	4477650	4431351	0	0
2024	27498258	5719728	5880006	5905794	4482365	4313959	4253768	4209783	0
2025	25731609	4606852	5433742	5586006	5610504	4258247	4098261	4041079	0
2026	25063172	5616731	4376509	5162055	5306706	5329979	4045334	3893348	0
2027	24975113	6163687	5335895	4157684	4903952	5041371	5063480	3843068	0
2028	25894072	7166303	5855502	5069100	3949800	4658754	4789302	4810306	0
2029	27830419	8229638	6807987	5562727	4815645	3752310	4425816	4549837	0
2030	30389103	8948792	7818156	6467588	5284591	4574863	0	0	0
2031	33571952	9700892	8501353	7427249	6144209	5020361	0	0	0

Figure 12: 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	494433	0.00	2.118
2025	2216151	483576	0.00	2.209
2026	2113537	449993	0.00	2.225
2027	0	550935	3.25	1.928
2028	0	565995	2.93	1.736
2029	0	610725	2.73	1.624
2030	0	654334	3.01	1.786
2031	0	592512	3.18	1.883

Figure 13: 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	466064	0.00	2.006
2025	2095396	454685	0.00	2.092
2026	0	425473	0.00	2.094
2027	0	414420	3.06	1.816
2028	0	533451	2.79	1.654
2029	0	566524	2.70	1.604
2030	0	610633	2.80	1.660
2031	0	572895	2.92	1.730

Figure 14: 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

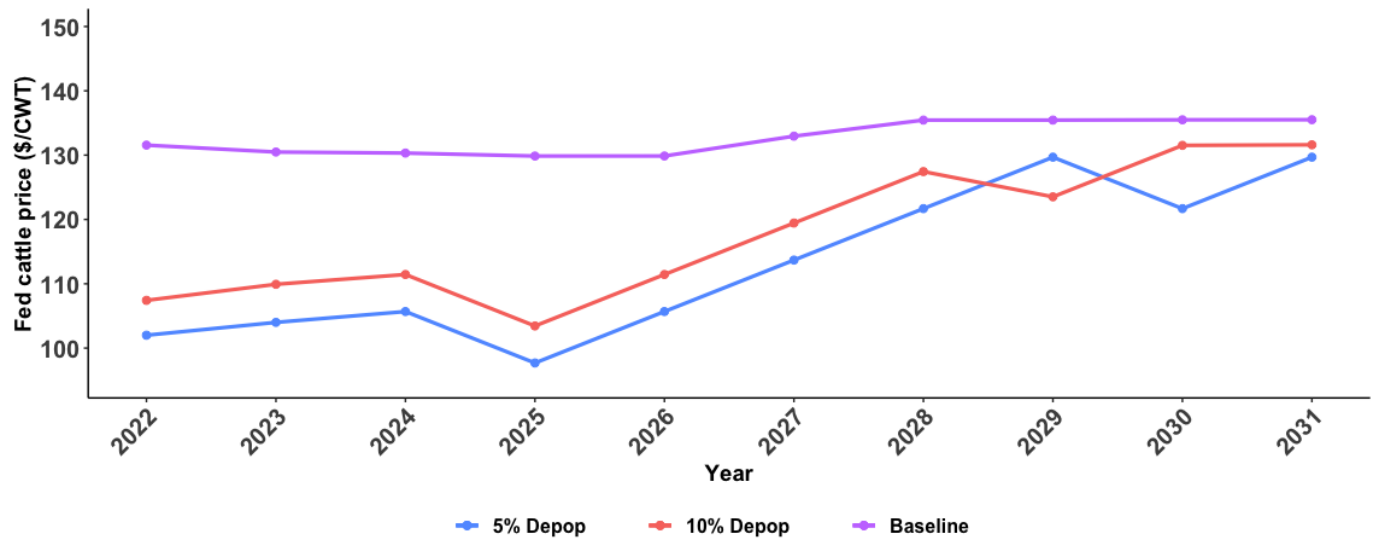


Figure 15: Fed cattle price

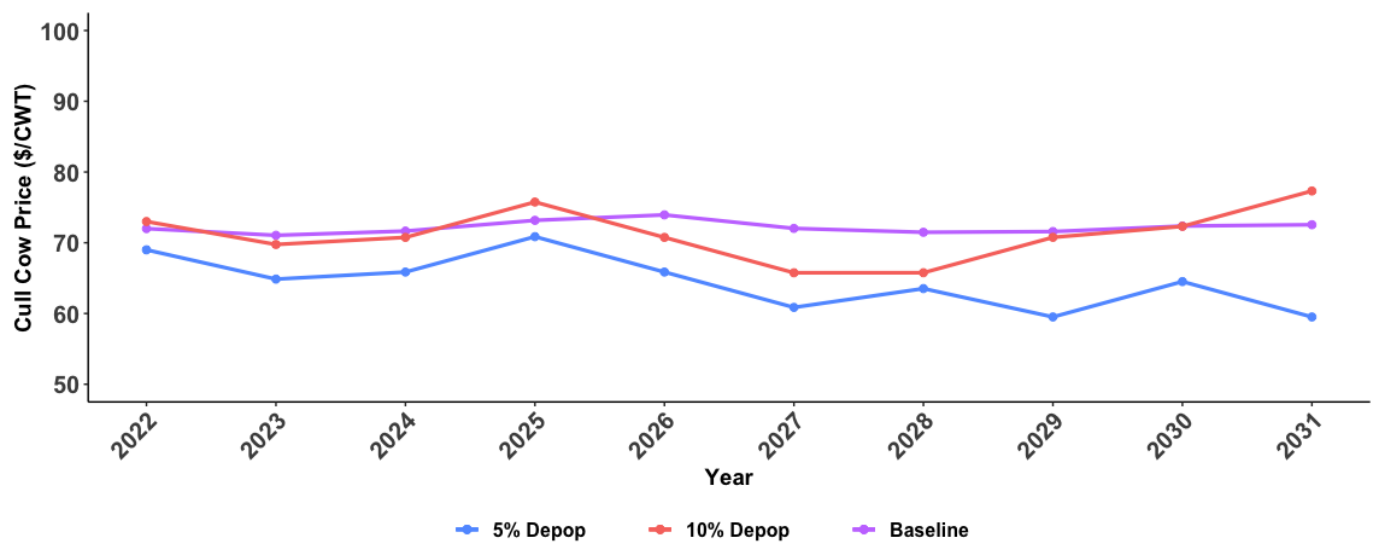


Figure 16: Cull cow price



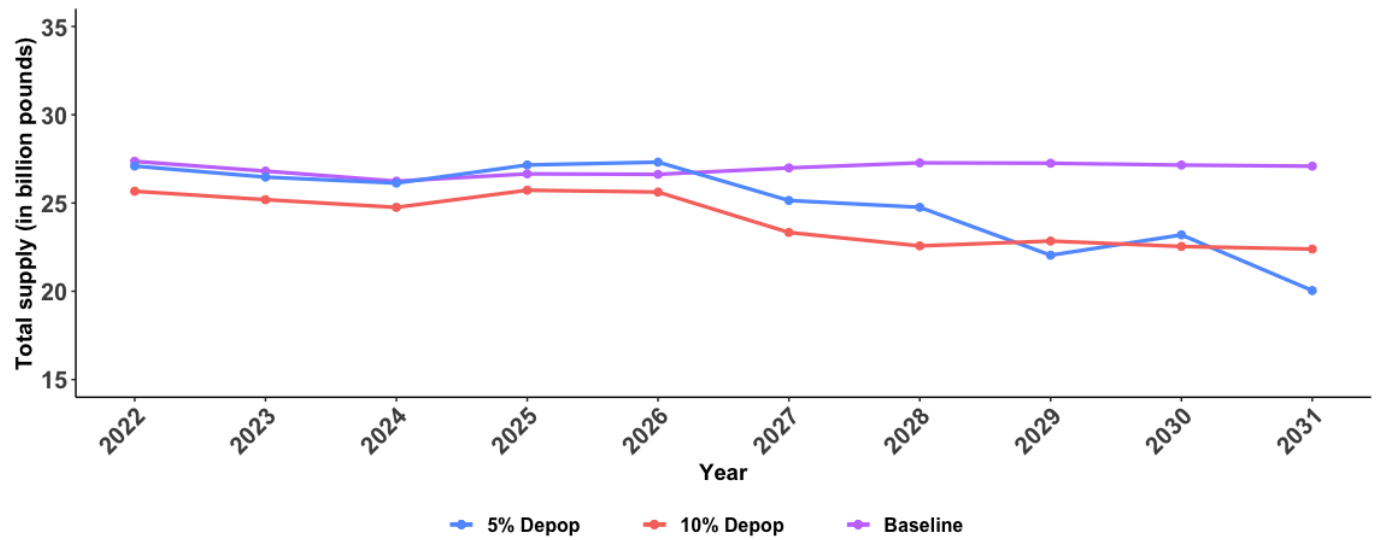


Figure 17: Total Supply - Before adjusting for exports and imports

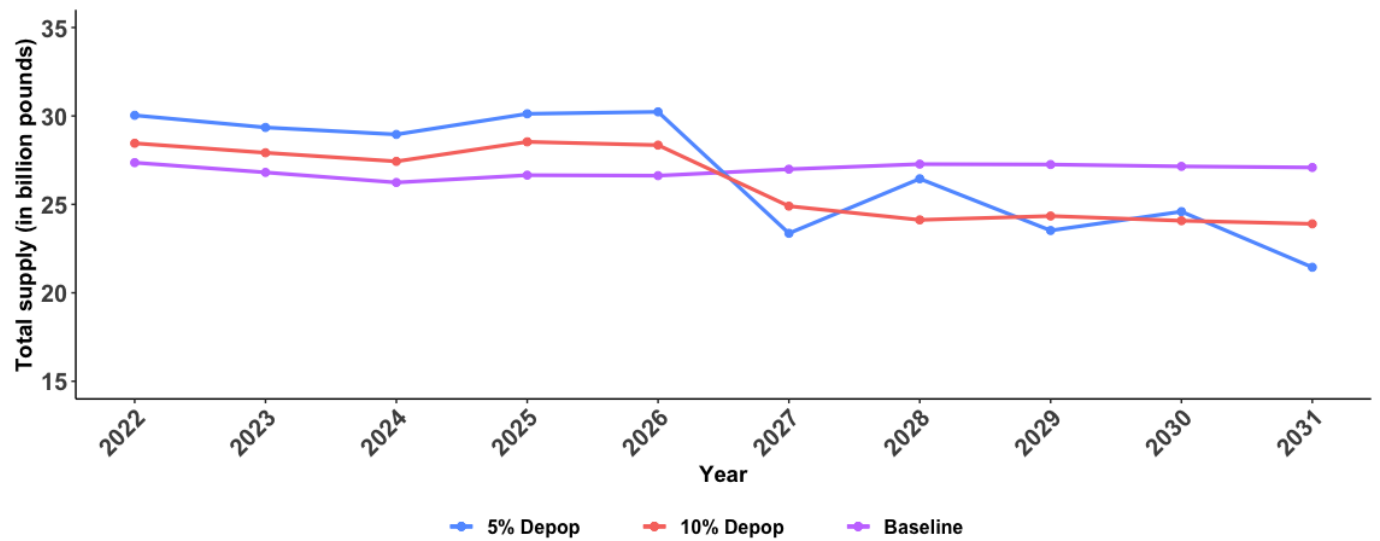


Figure 18: Total Supply - After adjusting for exports and imports

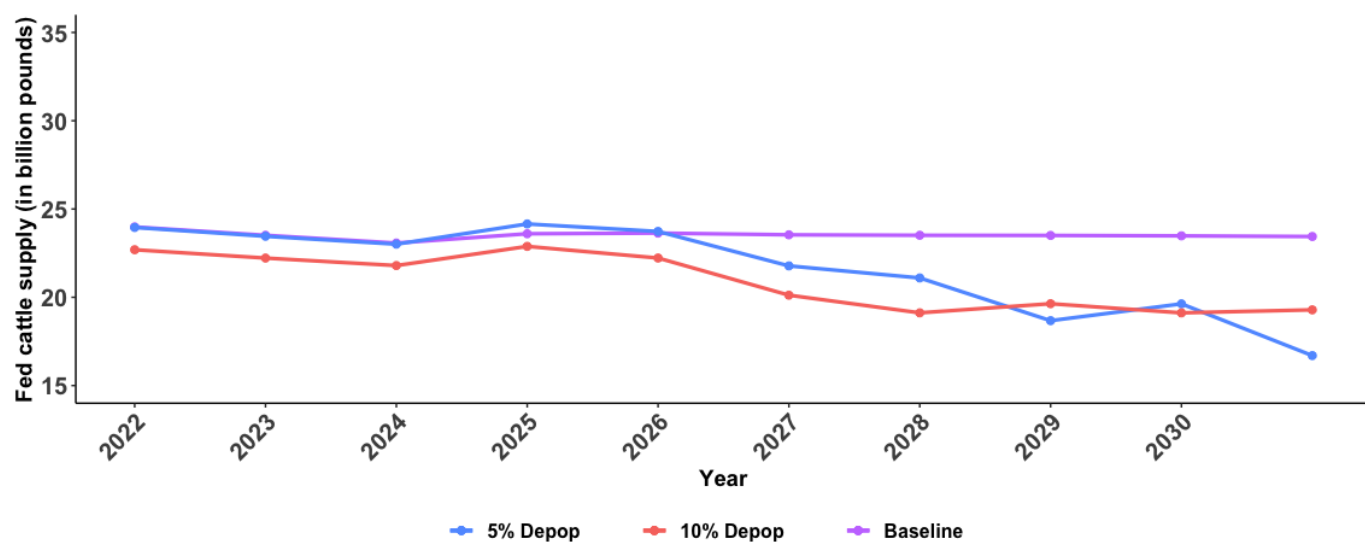


Figure 19: Fed Cattle Supply - Before adjusting for exports and imports

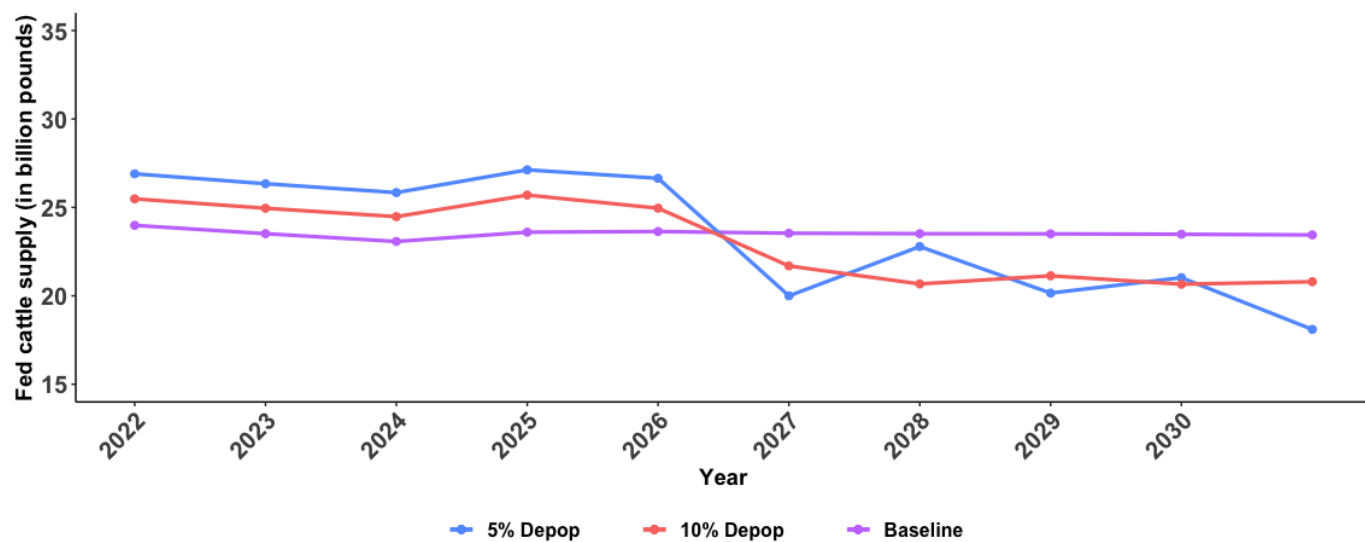


Figure 20: Fed Cattle Supply - After adjusting for exports and imports

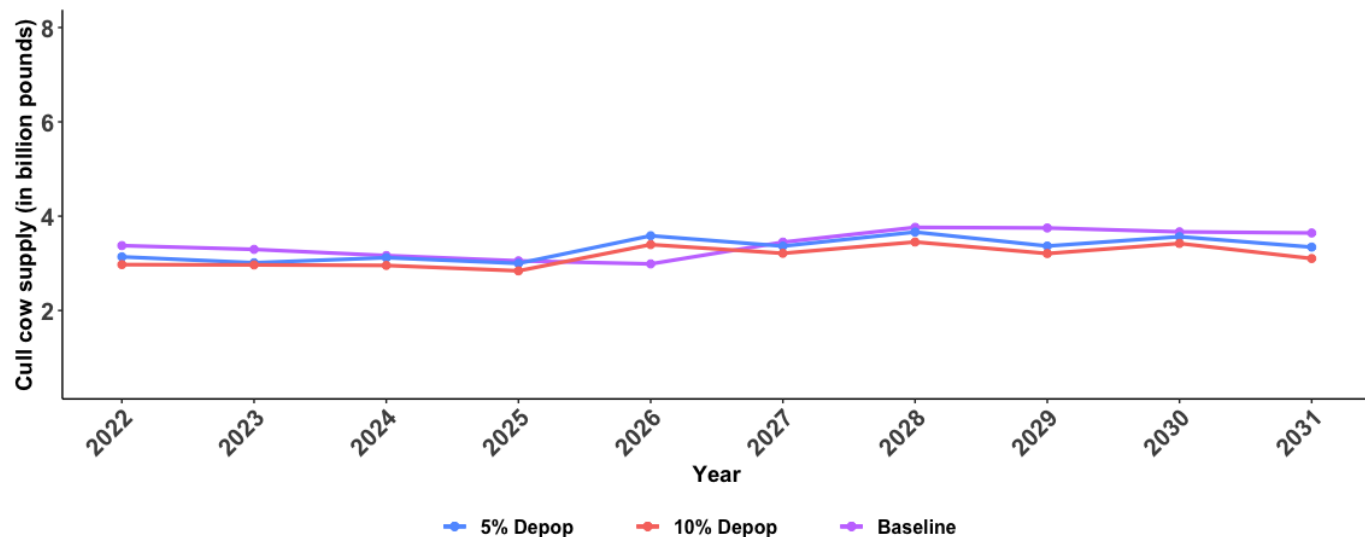


Figure 21: Cull cow supply - Before adjusting for exports and imports

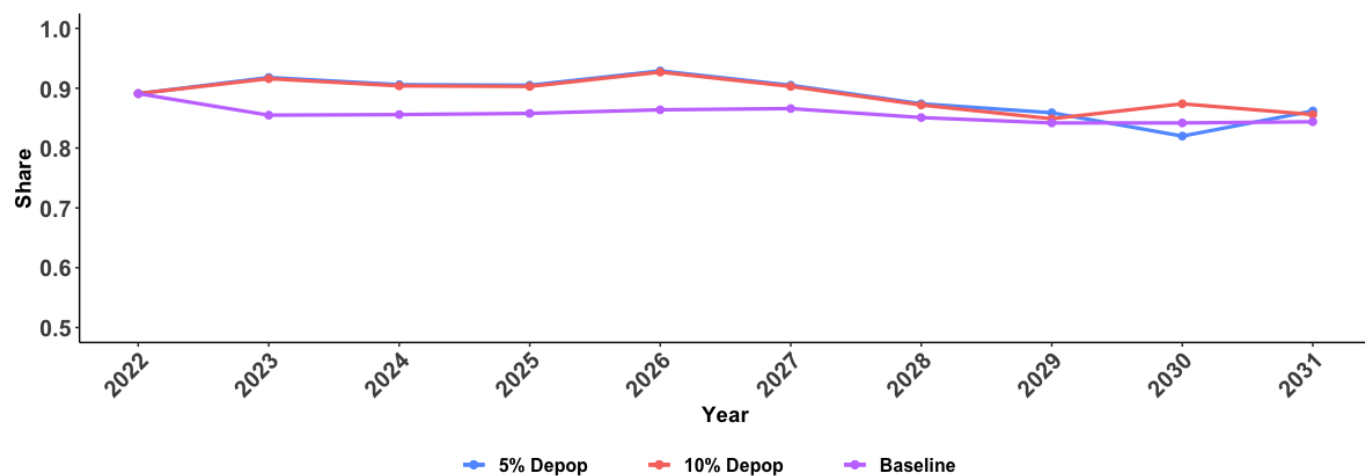


Figure 22: Share

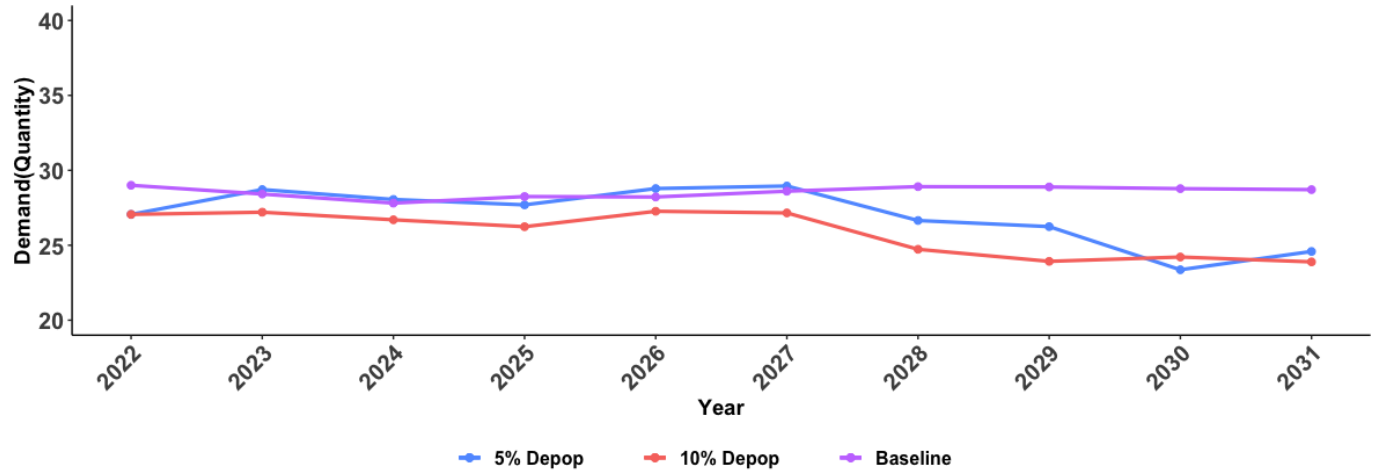


Figure 23: Demand(Quantity)

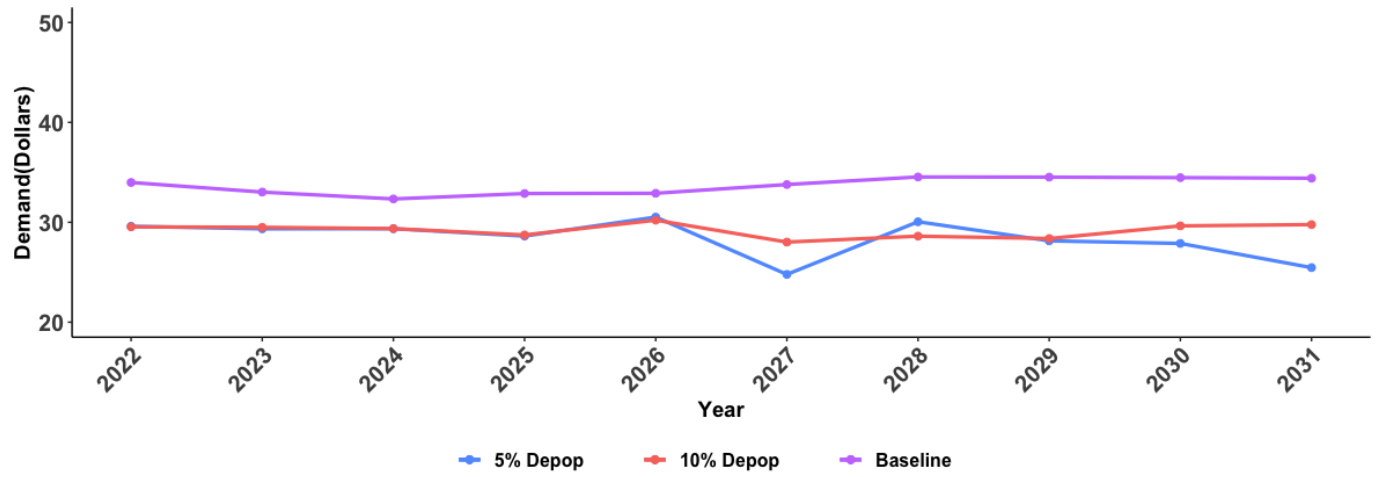


Figure 24: Demand(Dollars)

Year	K	k3	k4	k5	k6	k7	k8	k9	k10
2022	29995052	6907361	5242532	5045566	4975167	4923723	0	0	0
2023	29978930	6482218	6561993	4980406	4793288	4726409	4677537	0	0
2024	30537779	7056383	6158108	6233893	4731385	4553623	4490088	4443660	0
2025	30056220	6043918	6703564	5850202	5922199	4494816	4325942	4265584	0
2026	27822153	4267332	5741722	6368386	5557692	5626089	4270075	4109645	0
2027	27875746	6443288	4053965	5454636	6049967	5279807	5344784	4056572	0
2028	25949719	4466348	6121124	3851267	5181904	5747468	5015817	5077545	0
2029	27848663	8195017	4243031	5815067	3658704	4922809	5460095	4765026	0
2030	29267368	7809727	7785266	4030879	5524314	3475768	4676668	5187090	0
2031	32790190	9984777	7419240	7396003	3829335	5248098	3301980	4442835	0

Figure 25: 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	28186439	6189481	6216625	4718279	4541010	4477650	4431351	0	0
2024	28430385	6651856	5880006	5905794	4482365	4313959	4253768	4209783	0
2025	27585108	5574829	6319263	5586006	5610504	4258247	4098261	4041079	0
2026	27691214	6483949	5296088	6003300	5306706	5329979	4045334	3893348	0
2027	27284709	5976644	6159752	5031284	5703135	5041371	5063480	3843068	0
2028	27776638	6854752	5677812	5851764	4779719	5417978	4789302	4810306	0
2029	28960285	7571066	6512015	5393921	5559176	4540733	5147079	4549837	0
2030	30561518	8047834	7192513	6186414	5124225	5281217	4313697	4889725	0
2031	33373663	9338809	7645443	6832887	5877093	4868014	5017156	4098012	0

Figure 26: 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	2265635	0	0.00	0.000
2027	0	568371	0.00	2.748
2028	2113158	460926	3.41	2.692
2029	0	566863	3.01	2.495
2030	0	591784	3.00	2.573
2031	0	651811	2.77	2.333

Figure 27: 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	2246332	0	0.00	0.000
2026	0	0	0.00	0.000
2027	0	457875	3.21	2.613
2028	0	566403	3.11	2.531
2029	0	586581	3.10	2.573
2030	0	614168	3.10	2.531
2031	0	569609	3.08	2.545

Figure 28: Imports and Exports under 10% percent depopulation