

# FMD Simulations

09-12-2022

## 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

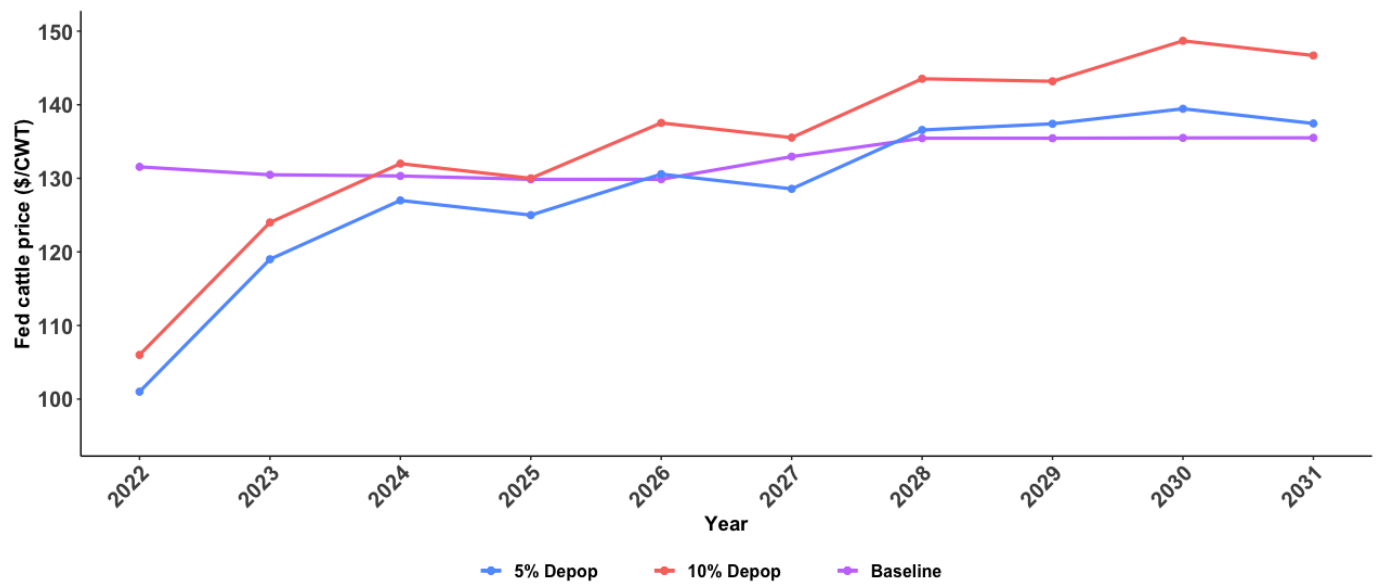


Figure 1: Fed cattle price

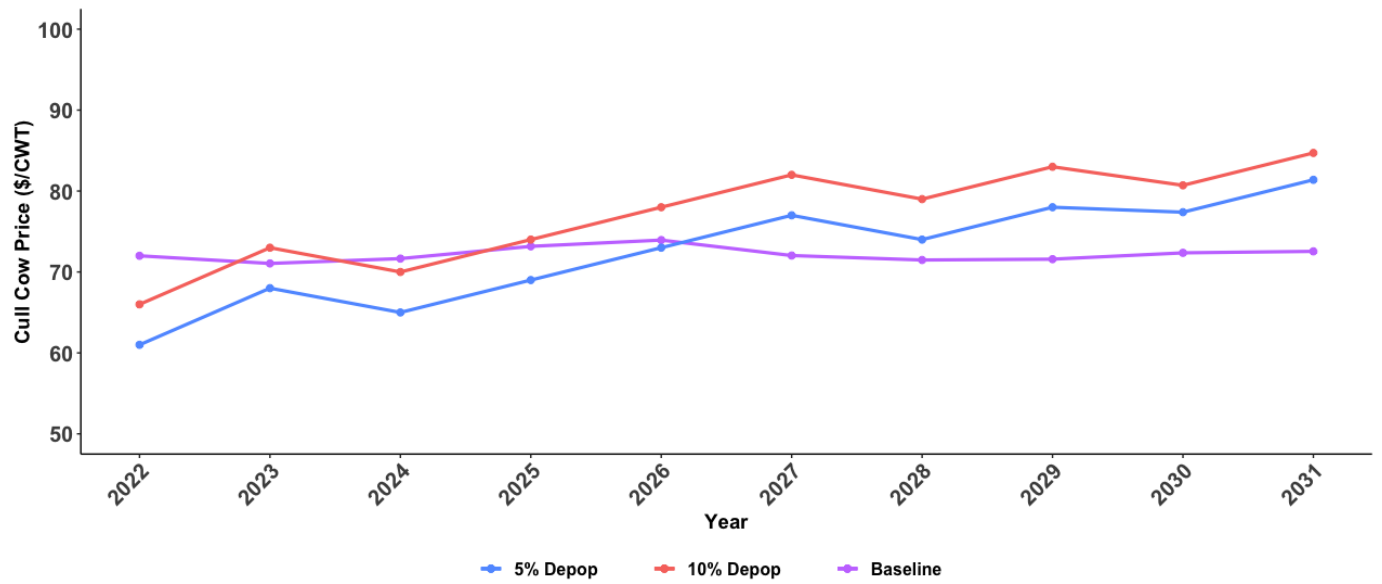


Figure 2: Cull cow price

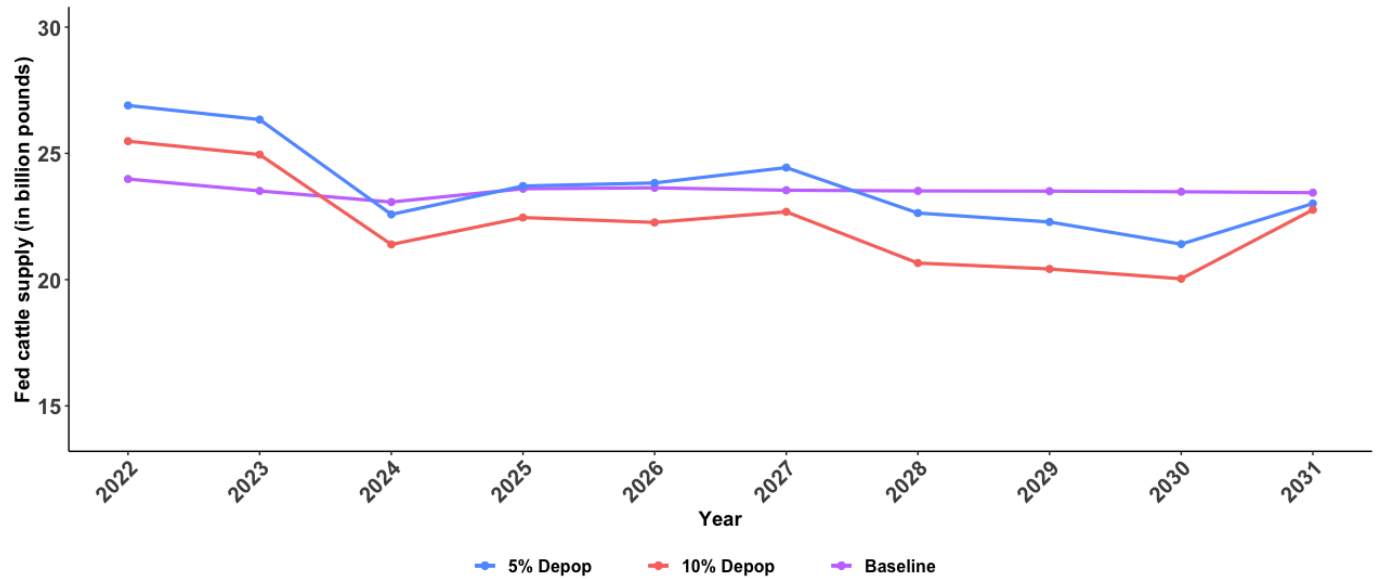


Figure 3: Fed Cattle Supply - After adjusting for exports and imports

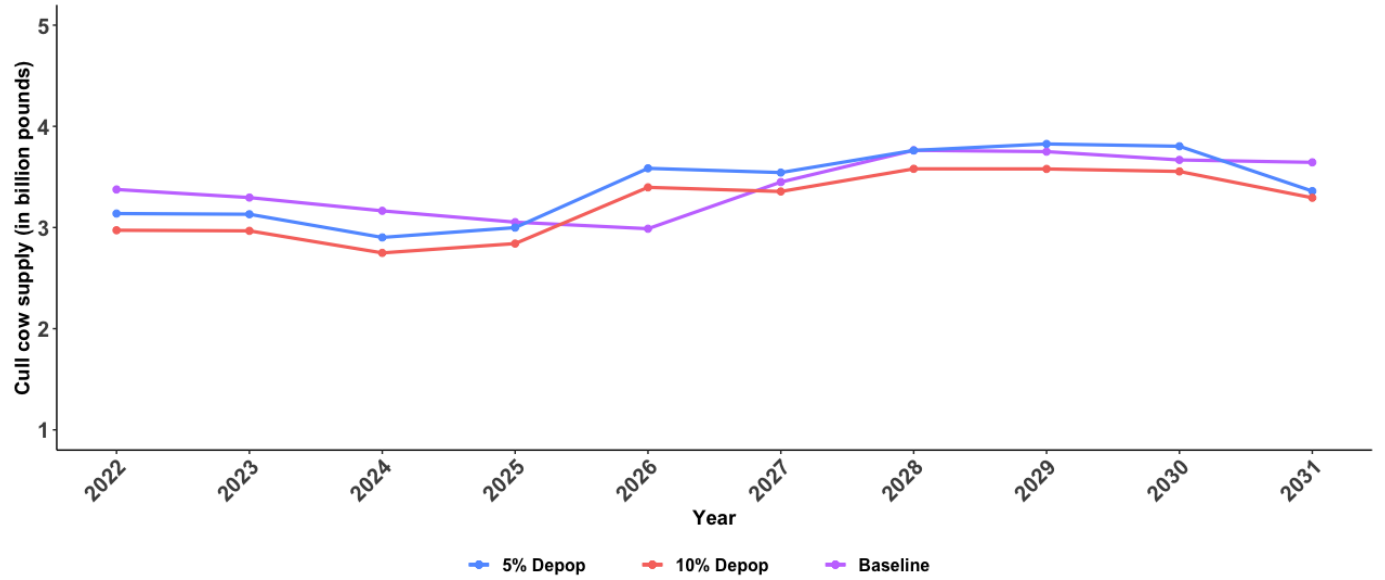


Figure 4: Cull cow supply - After adjusting for exports and imports

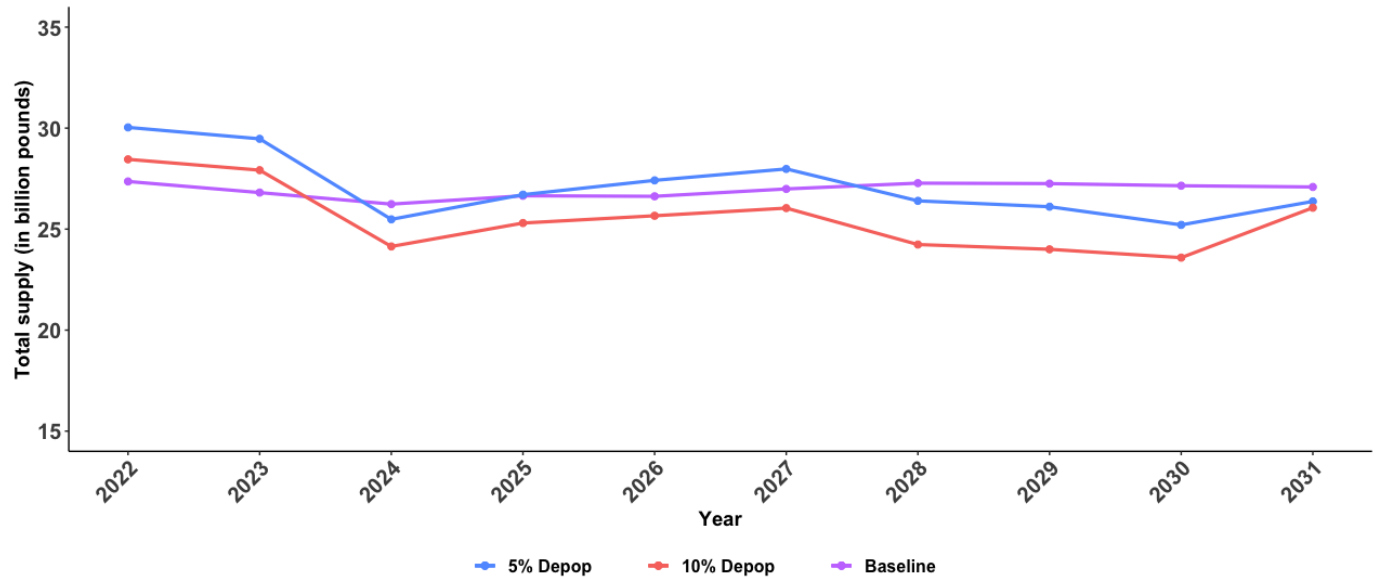


Figure 5: Total Supply - After adjusting for exports and imports

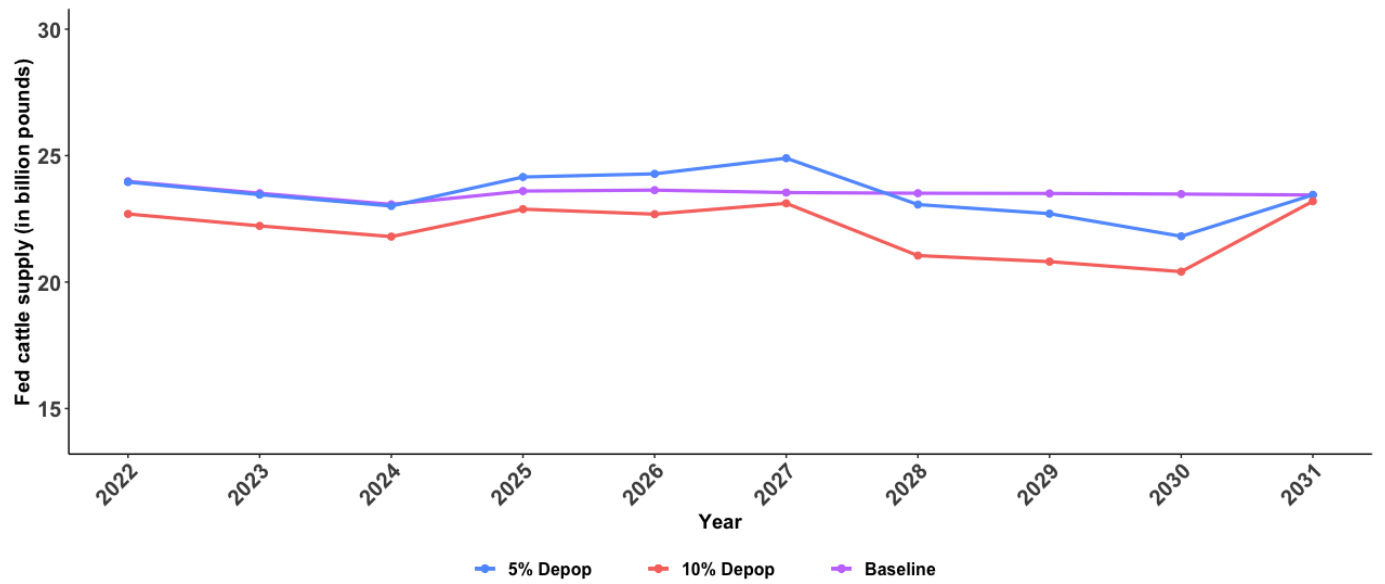


Figure 6: Fed Cattle Supply - Before adjusting for exports and imports

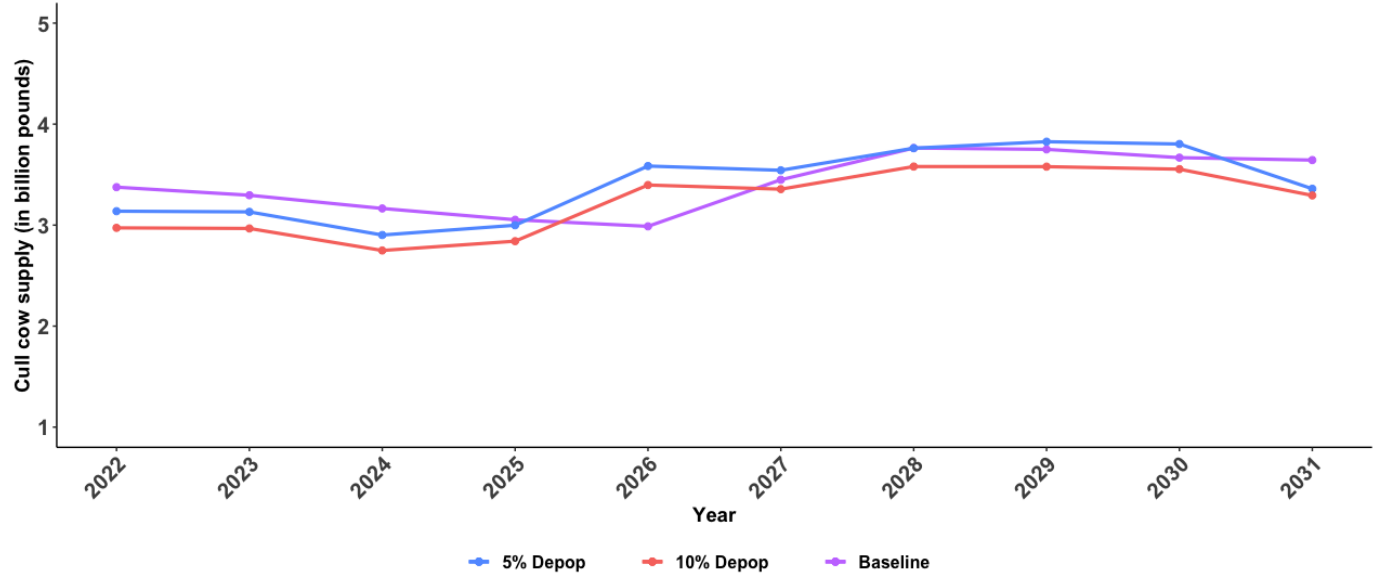


Figure 7: Cull cow supply - Before adjusting for exports and imports

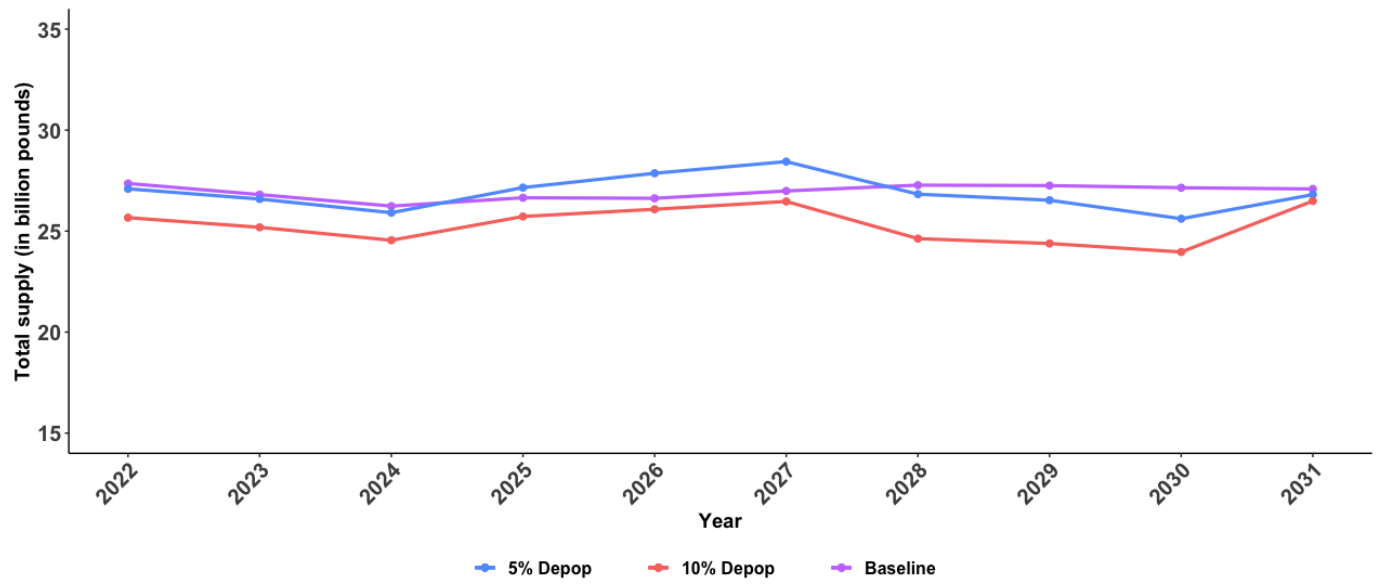


Figure 8: Total Supply - Before adjusting for exports and imports

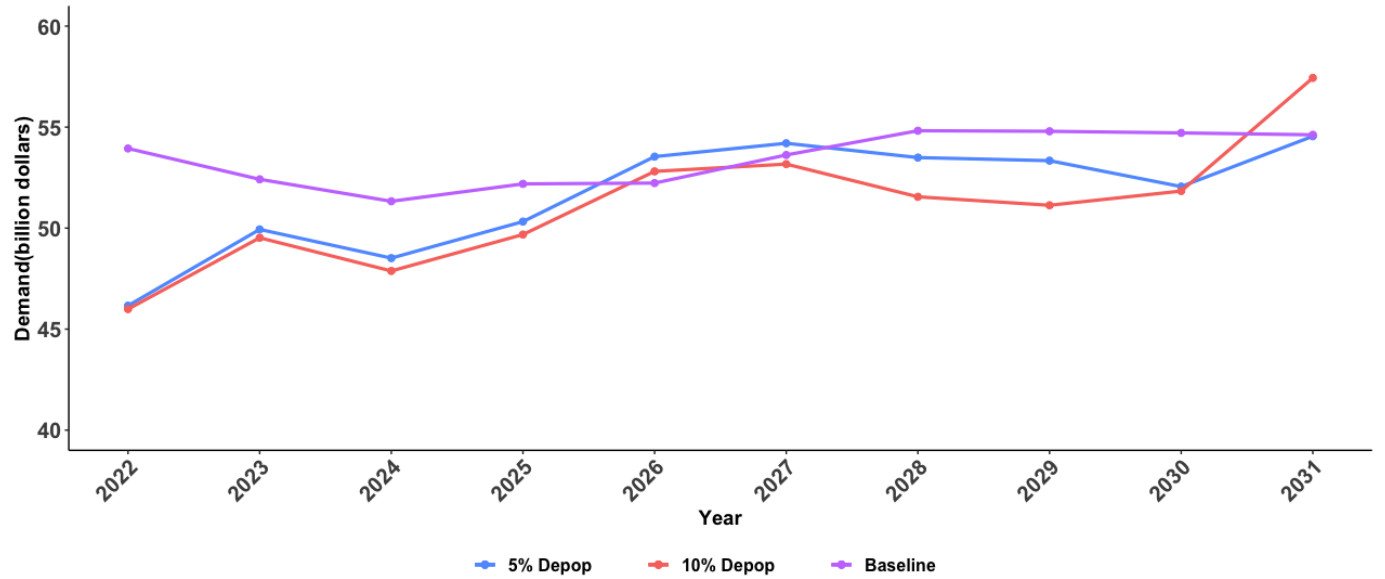


Figure 9: Demand(Dollars)

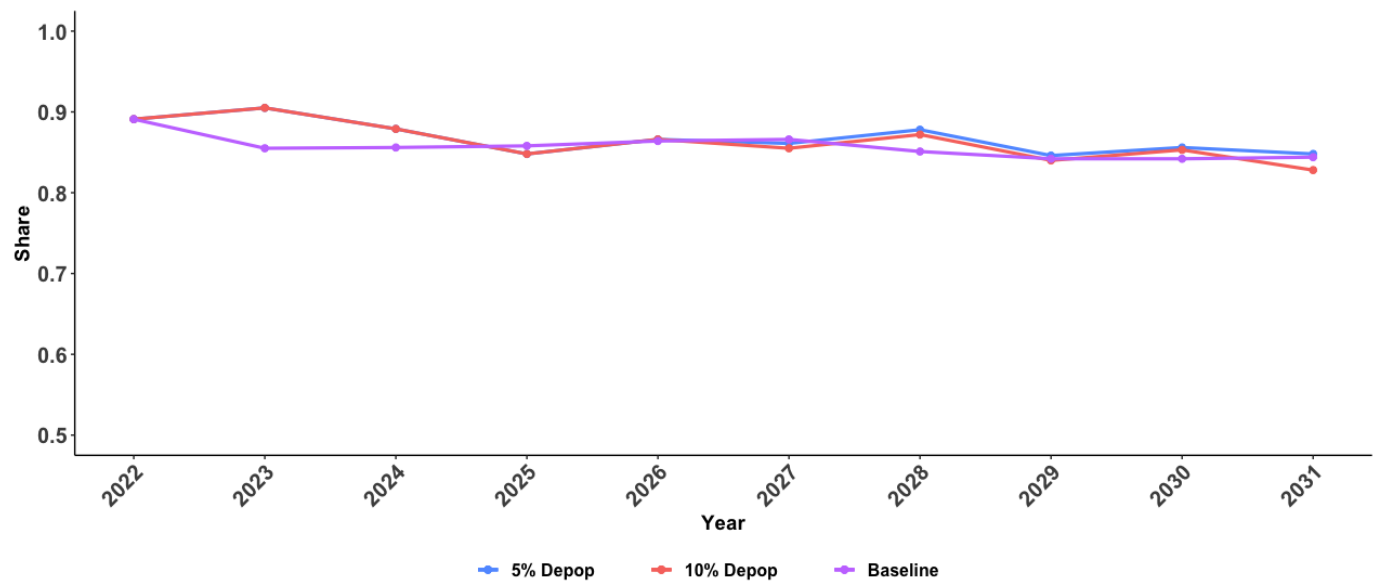


Figure 10: Share

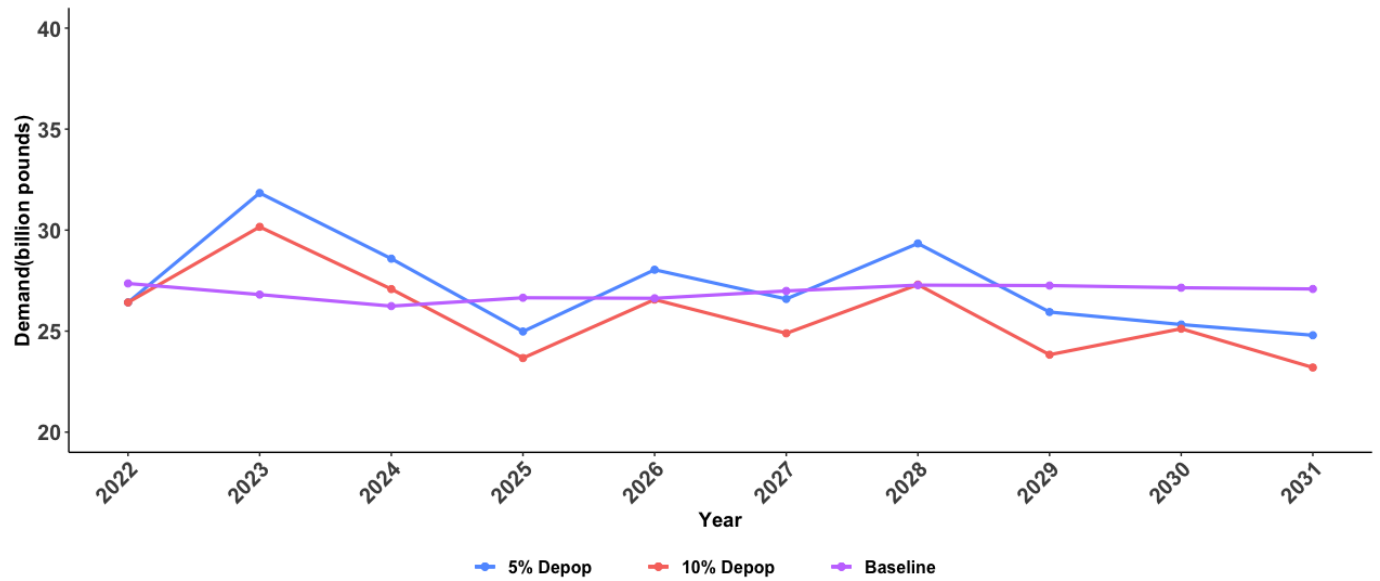


Figure 11: Demand(Quantity)

Year	K	k3	k4	k5	k6	k7	k8	k9	k10
2022	29995052	6907361	5242532	5045566	4975167	4923723	0	0	0
2023	30322816	6826104	6561993	4980406	4793288	4726409	0	0	0
2024	31056546	7248459	6484799	6233893	4731385	4553623	4490088	0	0
2025	31876000	7370869	6886036	6160559	5922199	4494816	4325942	4265584	0
2026	31792868	6509256	7002326	6541734	5852531	5626089	4270075	4109645	0
2027	31016137	5811500	6183793	6652209	6214647	5559905	5344784	4056572	0
2028	29991855	5525113	5520925	5874604	6319599	5903915	0	0	0
2029	31244059	7750384	5248857	5244879	5580873	6003619	0	0	0
2030	31478995	6795726	7362865	4986414	4982635	5301830	0	0	0
2031	30824267	5917810	6455940	6994721	4737093	4733503	0	0	0

Figure 12: 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	28462525	6465566	6216625	4718279	4541010	4477650	0	0	0
2024	28937730	6896919	6142288	5905794	4482365	4313959	4253768	0	0
2025	29365580	6873325	6552073	5835174	5610504	4258247	4098261	4041079	0
2026	29258213	6359499	6529658	6224469	5543415	5329979	4045334	3893348	0
2027	28890635	6093920	6041524	6203175	5913246	5266244	5063480	3843068	0
2028	29074059	6626544	5789224	5739448	5893017	5617583	0	0	0
2029	30159601	7537832	6295217	5499763	5452476	5598366	0	0	0
2030	32269244	8616211	7160940	5980456	5224775	5179852	0	0	0
2031	33969432	8312238	8185400	6802893	5681433	4963536	0	0	0

Figure 13: Inventory distribution under 10% percent depopulation

Year	imports	exports	importsBeef	exportsBeef
2022	0	0	0	0.000
2023	0	0	0	0.000
2024	0	309619	0	2.118
2025	0	316220	0	2.209
2026	0	306807	0	2.278
2027	0	196852	0	2.325
2028	2442320	192043	0	2.193
2029	0	316009	0	2.169
2030	0	307711	0	2.059
2031	0	194909	0	2.163

Figure 14: Imports and Exports under 5% percent depopulation

Year	imports	exports	importsBeef	exportsBeef
2022	0	0	0	0.000
2023	0	0	0	0.000
2024	0	176232	0	2.006
2025	0	294735	0	2.092
2026	0	181823	0	2.132
2027	0	181158	0	2.164
2028	0	290294	0	2.013
2029	0	306752	0	1.992
2030	0	331605	0	1.938
2031	0	574489	0	2.155

Figure 15: 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

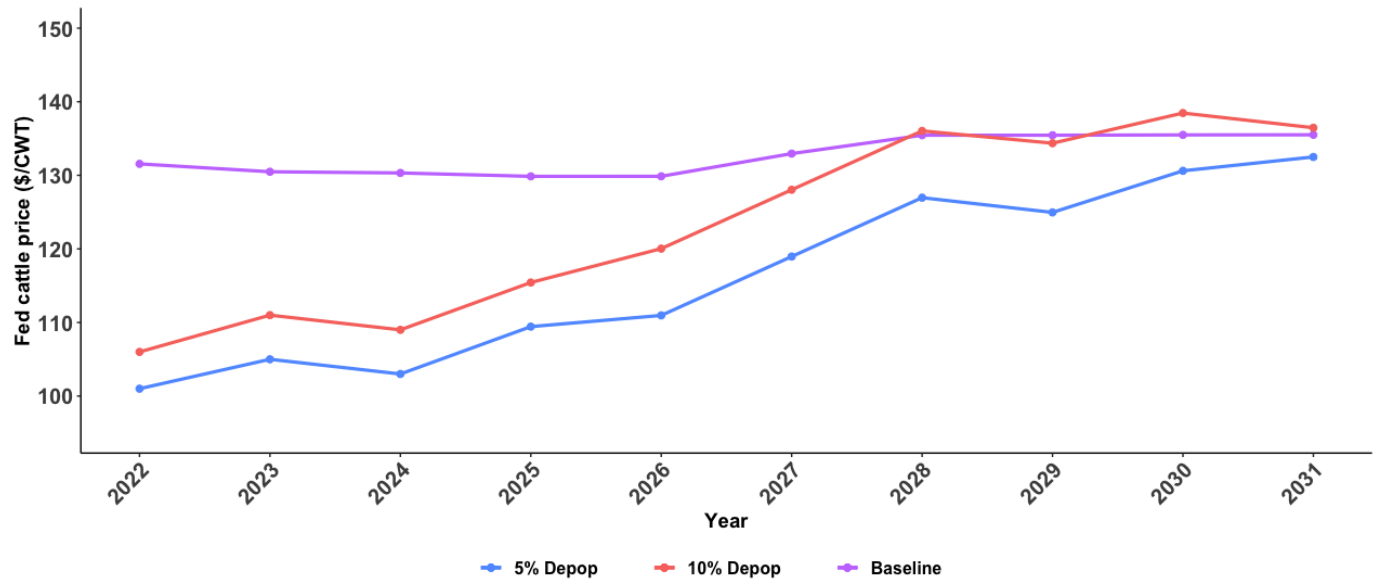


Figure 16: Fed cattle price

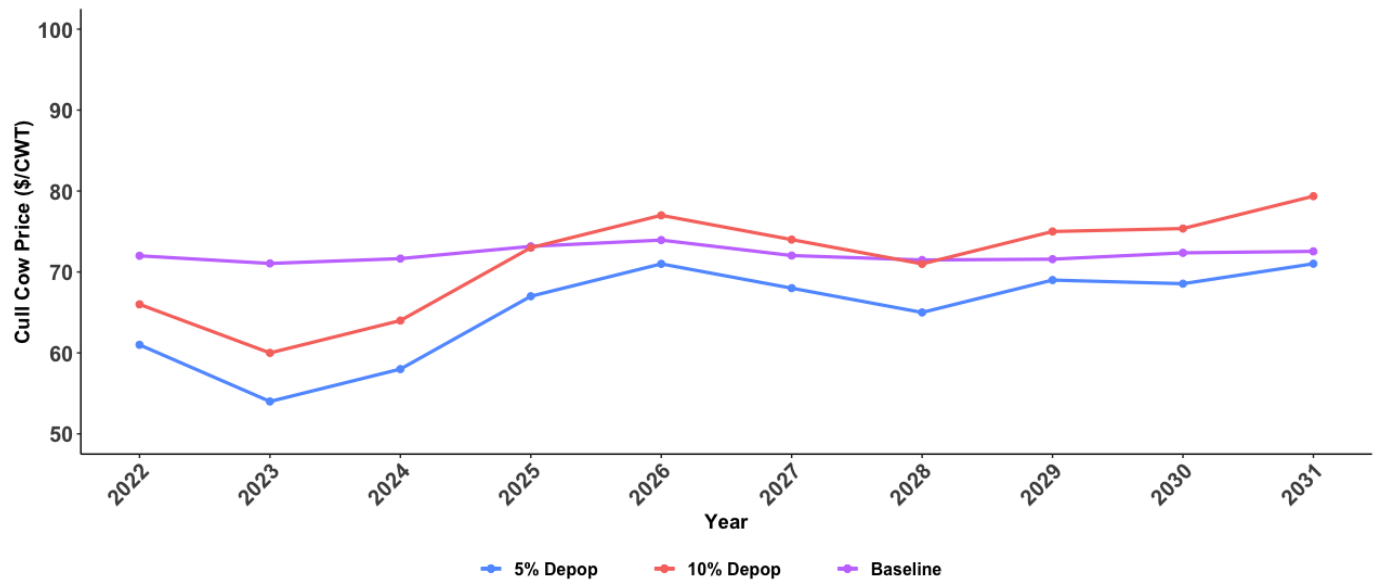


Figure 17: Cull cow price

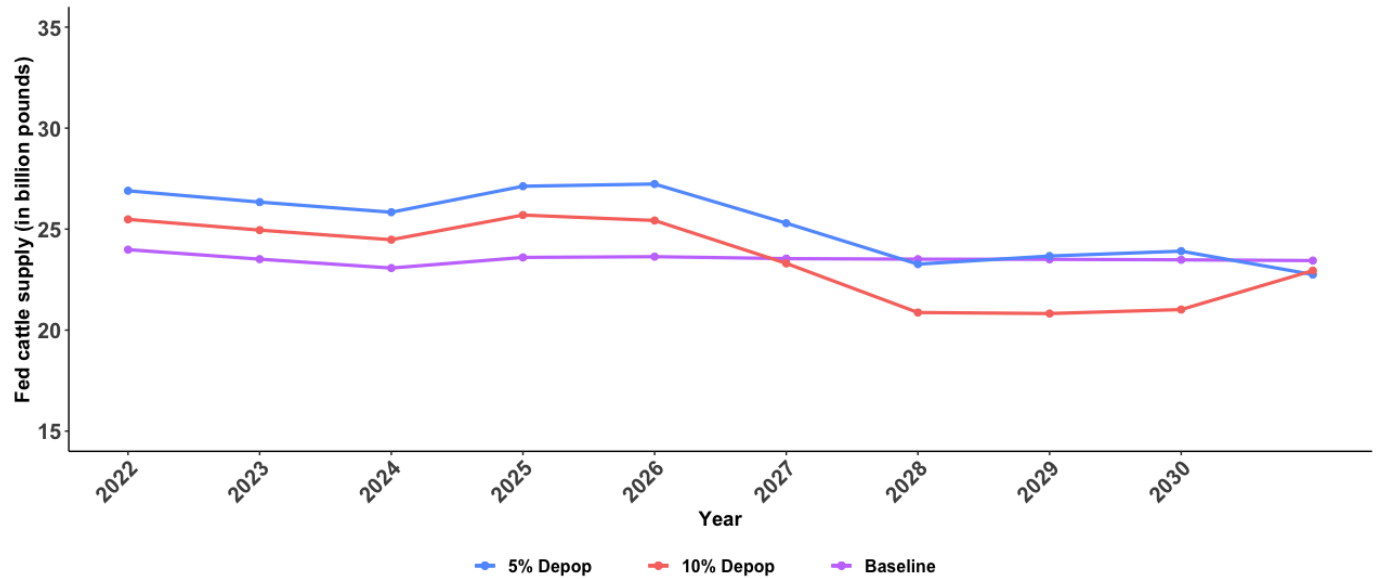


Figure 18: Fed Cattle Supply - After adjusting for exports and imports

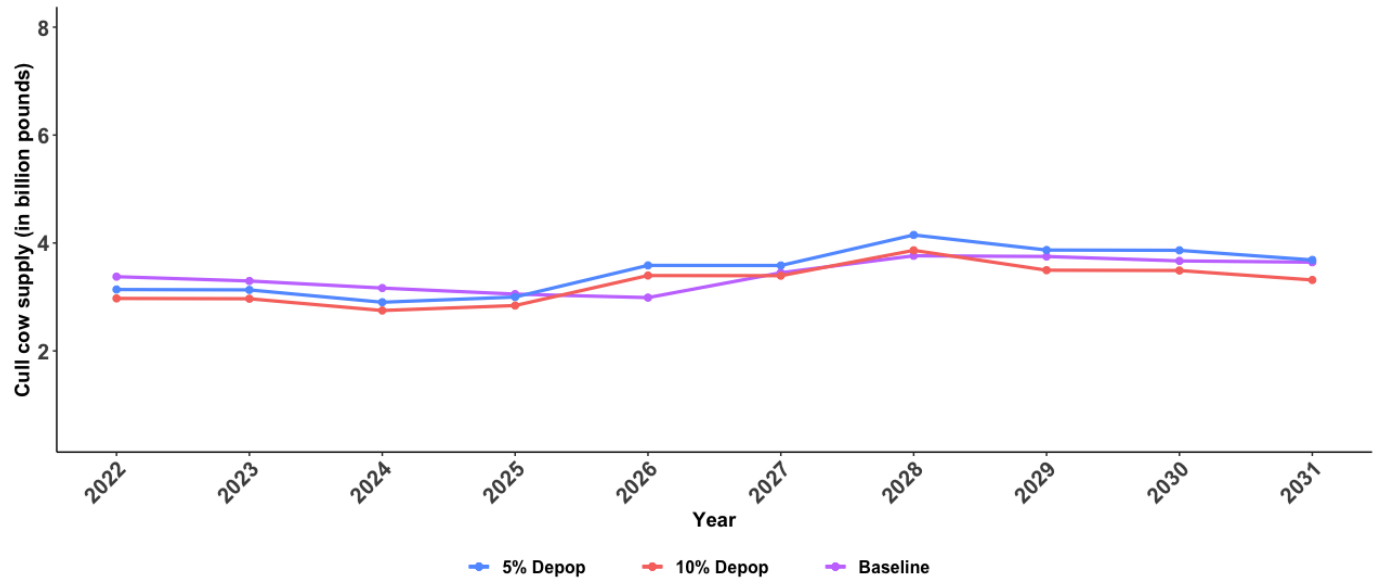


Figure 19: Cull cow supply - After adjusting for exports and imports

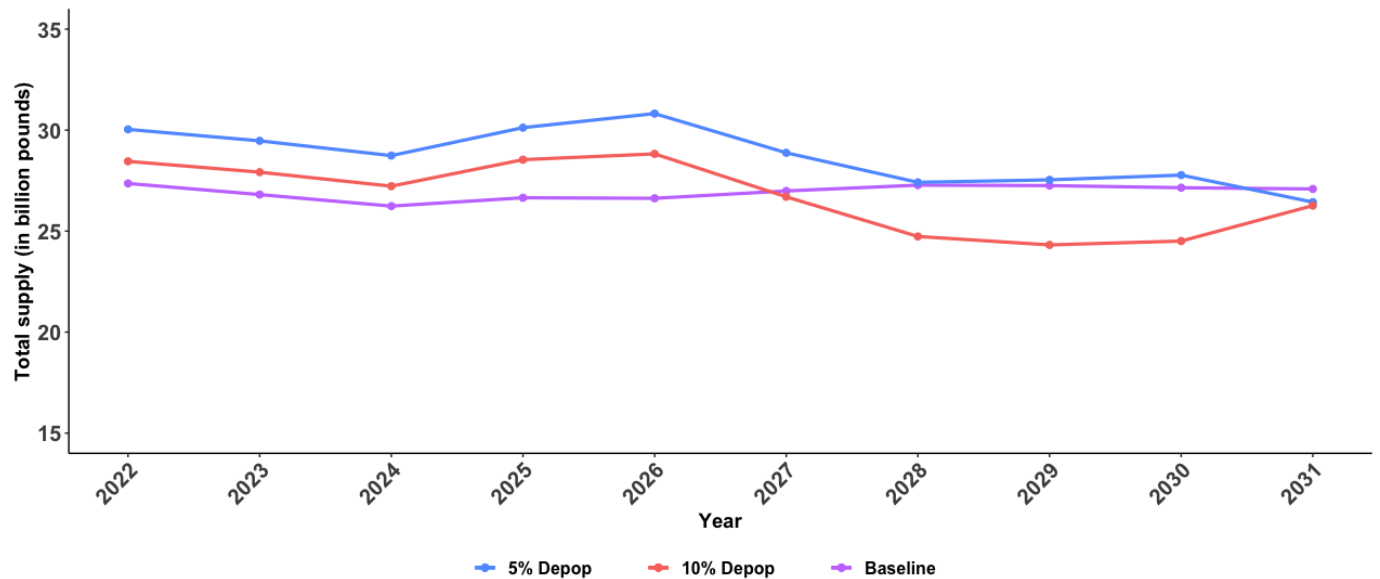


Figure 20: Total Supply - After adjusting for exports and imports

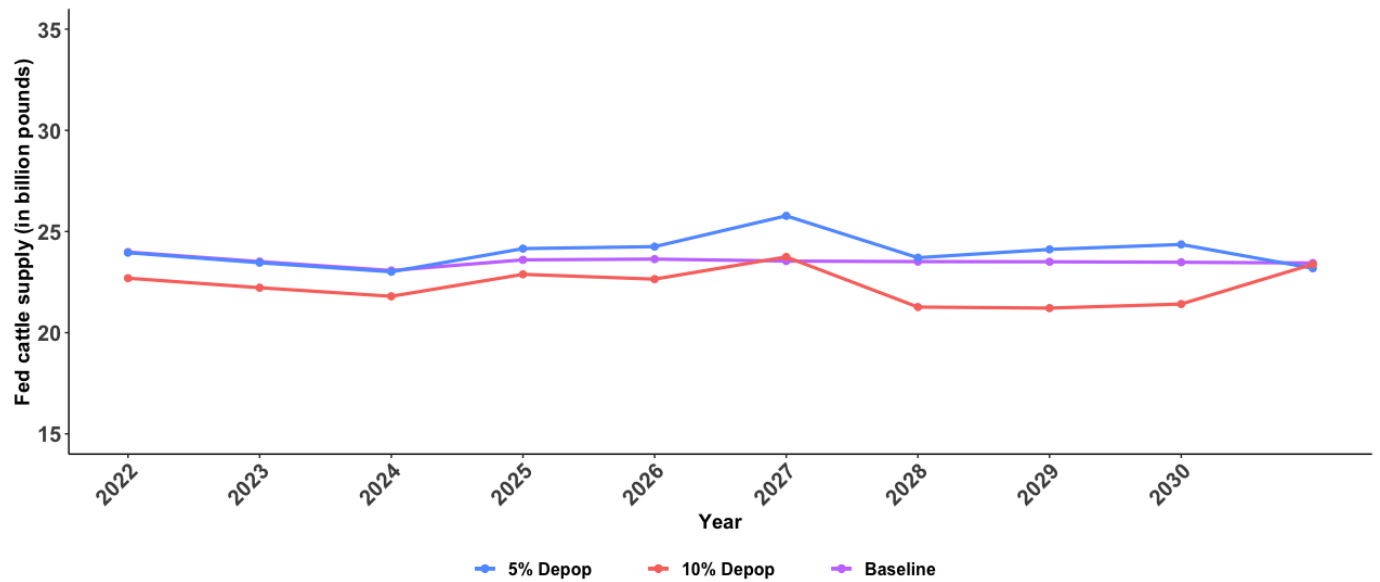


Figure 21: Fed Cattle Supply - Before adjusting for exports and imports

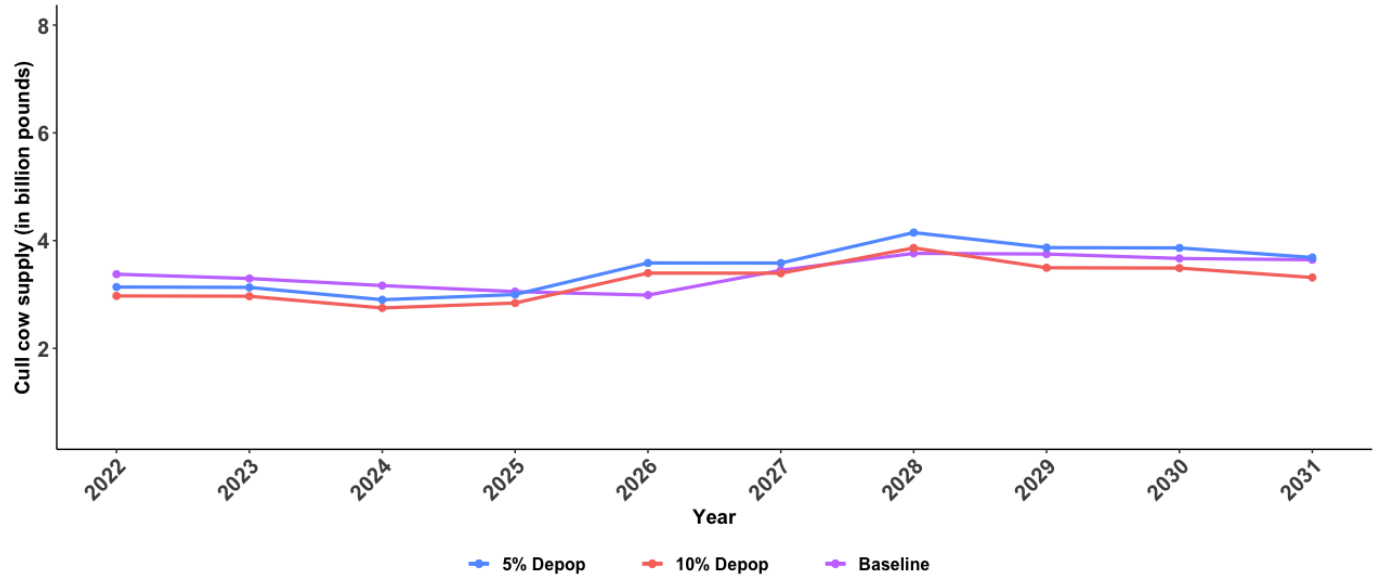


Figure 22: Cull cow supply - Before adjusting for exports and imports

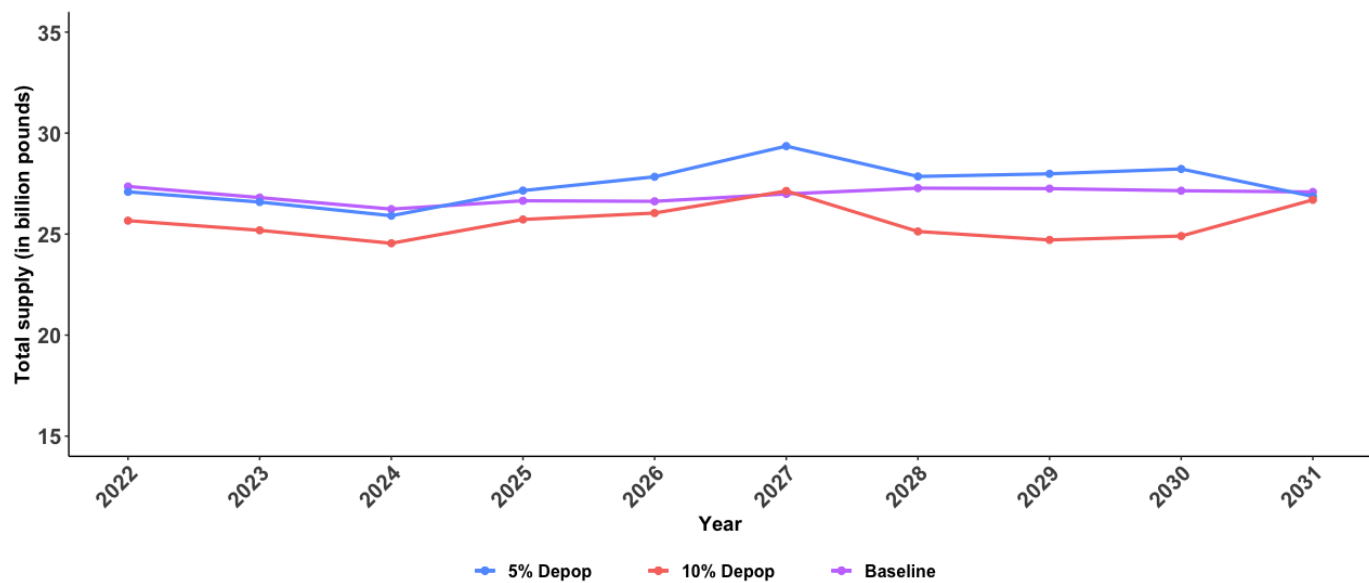


Figure 23: Total Supply - Before adjusting for exports and imports

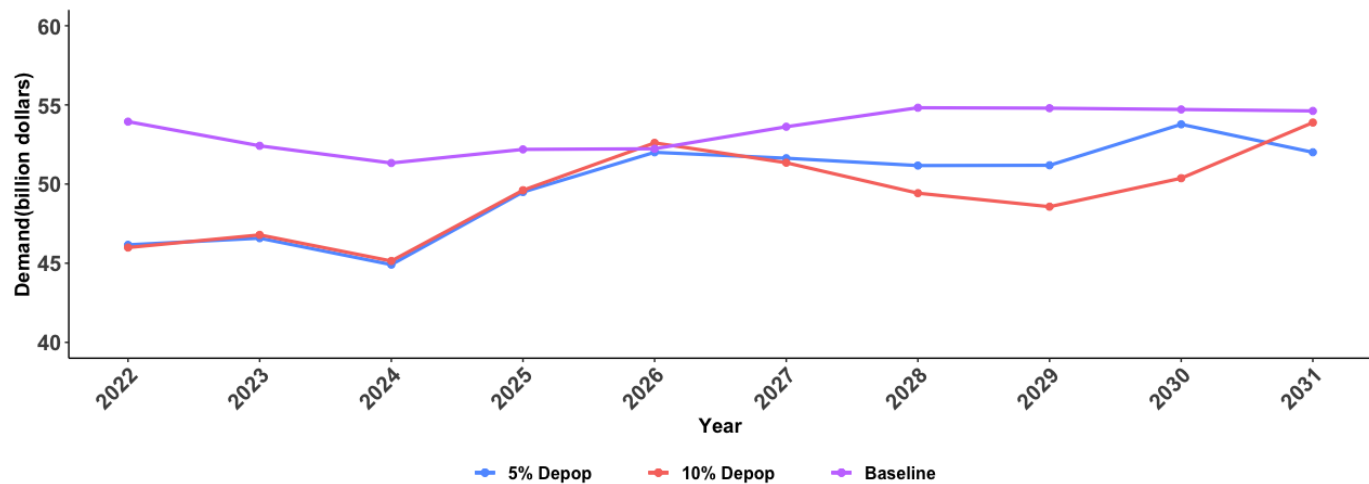


Figure 24: Demand(Dollars)

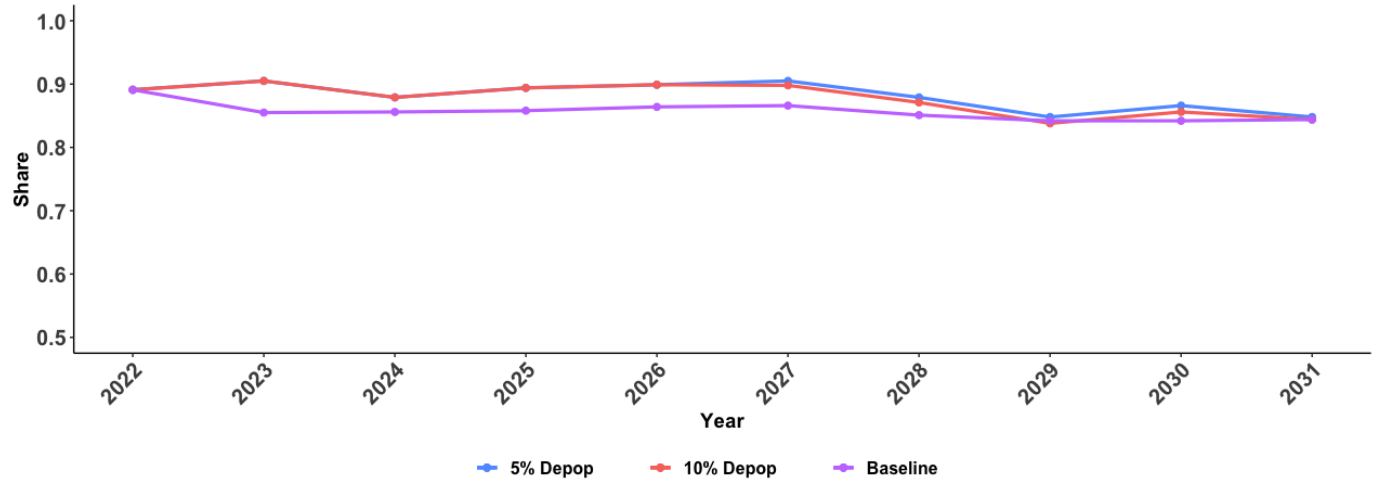


Figure 25: Share

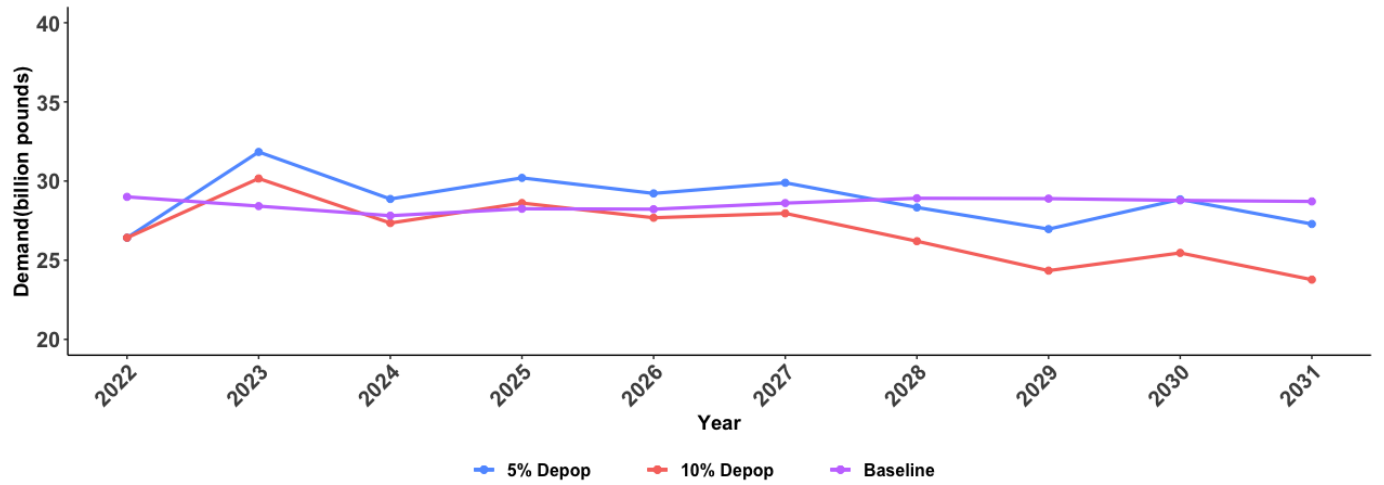


Figure 26: Demand(Quantity)

Year	K	k3	k4	k5	k6	k7	k8	k9	k10
2022	29995052	6907361	5242532	5045566	4975167	4923723	0	0	0
2023	30300882	6804171	6561993	4980406	4793288	4726409	0	0	0
2024	31780873	7993623	6463962	6233893	4731385	4553623	4490088	0	0
2025	32650159	7456917	7593942	6140764	5922199	4494816	4325942	4265584	0
2026	33229110	7210047	7084071	7214245	5833726	5626089	4270075	4109645	0
2027	31610106	5041039	6849544	6729868	6853533	5542040	5344784	0	0
2028	32632151	7601138	4788987	6507067	6393374	6510856	5264938	5077545	0
2029	32060959	6059003	7221081	4549537	6181714	6073706	6185313	5001691	0
2030	29950472	4491149	5756053	6860027	4322061	5872628	0	0	0
2031	31035703	7581342	4266591	5468250	6517026	4105958	0	0	0

Figure 27: 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	28429279	6432320	6216625	4718279	4541010	4477650	0	0	0
2024	29454002	7444775	6110704	5905794	4482365	4313959	4253768	0	0
2025	29718982	6736268	7072536	5805169	5610504	4258247	4098261	4041079	0
2026	29715092	6480647	6399454	6718909	5514910	5329979	4045334	3893348	0
2027	27846633	4615883	6156615	6079482	6382964	5239165	0	0	0
2028	29019848	7564134	4385089	5848784	5775508	6063816	4977207	0	0
2029	29493092	6922824	7185927	4165834	5556345	5486732	5760625	4728346	0
2030	29951599	6931750	6576683	6826631	3957543	5278528	0	0	0
2031	30077238	6621807	6585162	6247849	6485299	3759665	0	0	0

Figure 28: Inventory distribution under 10% percent depopulation

Year	imports	exports	importsBeef	exportsBeef
2022	0	0	0	0.000
2023	0	0	0	0.000
2024	0	0	0	0.000
2025	0	0	0	0.000
2026	0	0	0	0.000
2027	2574099	205745	0	2.395
2028	0	323519	0	2.277
2029	0	202049	0	2.288
2030	2438950	198512	0	2.297
2031	0	312910	0	2.109

Figure 29: Imports and Exports under 5% percent depopulation

Year	imports	exports	importsBeef	exportsBeef
2022	0	0	0	0.000
2023	0	0	0	0.000
2024	0	0	0	0.000
2025	0	0	0	0.000
2026	0	0	0	0.000
2027	2267629	183987	0	2.214
2028	0	299594	0	2.054
2029	0	296077	0	2.020
2030	0	299157	0	2.025
2031	0	296785	0	2.107

Figure 30: Imports and Exports under 10% percent depopulation