

# Introduction

Friday, December 5, 2025 11:38 AM



Java Program used for running card analysis

SPCardAnal  
ysisTwo

This report presents an empirical analysis of game balance in Saint Petersburg, identifying statistical outliers and dominant strategies to inform the design of a balanced "Edition 3." Rather than relying on subjective observation, we generated objective performance data through extensive Monte-Carlo simulations using two advanced AI players: **AIDanFMCTrainerTimeManaged** (a time-sensitive agent trained on FlatMC data with feature selection) and **AIDanExpectiMiniMaxTimeManaged** (a time-sensitive version of our tournament two player).

For the preliminary analysis, to ensure statistical significance, we simulated 1,200 games for the First Edition and 750 games for the Second Edition, with strict time limits of 3.0 to 3.5 minutes per game to replicate tournament pressure. Our analysis separates performance metrics into two distinct game phases: Early Game (Rounds 1 through 4) and Late Game (Round 5 onwards). This distinction allows us to isolate "snowball" cards (those that grant a disproportionate advantage when purchased early) from cards intended specifically for end-game scoring.

To identify unbalanced cards accurately, we categorized cards by type (Workers, Aristocrats, Buildings) and normalized their Win Rates and Pick Rates using the Modified Z-Score. Based on the logic implemented in SPCardAnalysisTwo.java, the Buy Rate (labeled as "Pick Rate" in the generated report) is calculated by dividing the total number of times a specific card was purchased (buysTotal) by the total number of unique times that card appeared in the market (appearancesTotal). The Win Rate is determined by dividing the number of games won by a player who purchased the card (winsTotal) by the total number of times the card was purchased (buysTotal), providing a percentage that indicates how often buying the card correlates with a victory. These metrics are calculated both globally and for specific game phases (Early vs. Late) to isolate temporal performance. Unlike a standard Z-score, which can be skewed by extreme outliers, this method uses the median and the Median Absolute Deviation (MAD) to provide a robust measure of how far a card's win rate deviates from its peers. The formula used is:

$$M_i = \frac{0.6475 \times (x_i - \tilde{x})}{MAD}$$

Where  $x_i$  represents the individual card's win rate,  $\tilde{x}$  is the median win rate for that specific card type, and  $MAD$  is the median of the absolute deviations from the median. A constant of 0.6745 is applied to align the scale with a standard normal distribution. This robust statistical approach allows us to detect true outliers while accounting for the small sample size of unique cards. Note that the *Marijnski-Theater* has been excluded from the preliminary analysis due to a known mechanical bug in the current simulation environment.

Based on the performance data generated from the First and Second Edition simulations, we identified critical imbalances where specific cards either dominated the win condition or were statistically irrelevant to competitive play. We simulated 9 different variations of cards.csv to identify the best balance changes. Using these insights, we engineered Edition 3, implementing targeted cost and value adjustments to flatten the power curve.

# Report on the Edition 1 Deck

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As stated earlier, since pick rate and win rate are compared in different scales, we decided to normalize the values. We used adjusted Z-score, which uses Median and MAD. The result is a behavior similar to that of a Z-score.

Card Name	Type	Pick Rate	Win Rate	Late Pick Rate	Late Win Rate	Status	mod z-score Pick Rate	mod z-score Win Rate	mod z-score Late Pick Rate	mod z-score Late Win Rate
Tax Man	trading aristocrat	0.57	0.64	0.64	0.64	WIN CONDITION	-2.473166667	1.68625	-1.854875	1.68625

**Tax Man** (trading): This card has the highest Win Rate (0.64) and Late Win Rate (0.64) in the report, with a high positive modified z-score (1.68625), indicating it is overpowered and needs a mechanical adjustment

Card Name	Type	Pick Rate	Win Rate	Early Pick Rate	Early Win Rate	Late Pick Rate	Late Win Rate	mod z-score Pick Rate	mod z-score Win Rate	mod z-score Early Pick Rate	mod z-score Late Pick Rate	mod z-score Early Win Rate	mod z-score Late Win Rate
Weaving Mill	trading worker	0.73	0.56	0.79	0.59	0.69	0.55	-0.449666667	1.349	-0.74195	5.396	-0.524611111	0.449666667
Wharf	trading worker	0.74	0.55	0.73	0.58	0.7	0.54	-0.374722222	1.01175	-1.14665	4.7215	-0.449666667	0.224833333
Gold Smelter	trading worker	0.64	0.43	0.46	0.37	0.64	0.45	-1.124166667	-3.03525	-2.9678	-9.443	-0.899333333	-1.798666667
Potjomkin's Village	building	0.73	0.47	0.52	0.45	0.89	0.49	0.037472222	-2.698	-0.292283333	-1.059928571	0.306590909	-1.349
Warehouse	building	0.71	0.46	0.47	0.43	0.94	0.48	-0.112416667	-3.3725	-0.517116667	-1.445357143	0.919772727	-2.0235

**Weaving Mill**(worker): It has a high overall Pick Rate (0.73) and a strong Win Rate (0.56), suggesting it's a popular and effective card that may be contributing too much power to its archetype.

**Gold Smelter** (worker): With a very low Win Rate (0.43) and an even worse Early Win Rate (0.37), combined with negative modified z-scores (e.g., -9.443 for Early Win Rate), this card is highly ineffective and requires a significant buff.

**Warehouse** (building): Its low Win Rate (0.46) and negative modified z-score (-3.3725) indicate it's not contributing to wins and needs a power increase to justify its pick.

**Potjomkin's Village** (building): Despite a high Late Pick Rate (0.89), its Win Rate remains low (0.47) with a negative modified z-score (-2.698), suggesting it fails to effectively convert late picks into wins.

**Wharf** (trading worker): While it has a high Pick Rate (0.74), its Win Rate (0.55) is only slightly above average, so it should be monitored to ensure it doesn't become overpowered following other archetype changes

Card Name	Type	Early Pick Rate	Early Win Rate	z-score Early Pick Rate	z-score Early Win Rate
Mistress of Ceremonies	aristocrat	0.5	0.76	1.4333125	2.36075

**Mistress of Ceremonies** (aristocrat): Its extremely high Early Win Rate (0.76) and very high positive modified z-score (2.36075) suggest it's too dominant when picked early and should be monitored for a potential nerf.

## Report on the Edition 2 deck

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Edition	Quantity	Type	Name	Cost	Rubles	Points	Other	Abbrev.	ed2 Qui	ed2 Typ	ed2 Nar	ed2 Cos	ed2 Rut	ed2 Poi	ed2 Oth	ed2 Abt	Same n	change	last
1	2	building	Observatory	6	0	0	1 point if u bo		2	building	Observato	7	0	0	1 point if u bo2		TRUE	1	
1	2	aristocrat	Judge	16	5	2		a16	2	aristocrat	Judge	17	5	2	a17		TRUE	1	
1	2	aristocrat	Mistress of Ceremonies	18	6	3		a18	2	aristocrat	Mistress o	20	6	3	a20		TRUE	2	
1	1	trading ari:	Patriarch	14	0	4		ta14	1	trading ari:Patriarch		16	0	4	ta16p		TRUE	2	
1	1	trading ari:	Tax Man	16	0	0	1 ruble per ta16		1	trading ari:Tax Man		17	0	0	0 1 ruble per ta17		TRUE	1	

The table above shows the changes made to the original deck. We can see that five cards were nerfed (Observatory, Judge, Mistress of Ceremonies, Patriarch, and Tax Man), all by increasing its price.

Card Name	Type	Pick Ra	Win Rat	Early Pi	Early W	Late Pi	Late Wi
Observatory	building	-0.09	0.02	-0.06	-0.03	-0.08	0.02
Judge	aristocrat	-0.03	-0.01	-0.11	-0.07	-0.03	-0.01
Tax Man	trading aristocrat	-0.04	-0.03			-0.01	-0.03
Mistress of Cerem	aristocrat	-0.07	-0.06	-0.1	-0.12	-0.07	-0.05
Patriarch	trading aristocrat	-0.06	-0.07			-0.07	-0.08

We can see that the nerf is definitely working on these cards, with pick rate and win rate on these cards decreasing from Edition 1 deck to the Edition 2 deck (early pick & win rate for Tax Man and Patriarch are deducted due to a small sample size of buys). However, based on our observations, Observatory, Judge, and Patriarch did not necessarily deserved their nerfs, as their win rates were all middle of the pack (check first edition analysis) in their respective card categories. Here are the full statistics for deck edition 2.

### CardBalanceReport\_Edition4

Card N	Type	Total Ap	Total Bu	Pick Ra	Win Rat	Early Pi	Early Bu	Early Pi	Early W	Late Ap	Late Bu	Late Pi	Late W	Status	mod z-s	re Late Win Rate				
Card Name	Type																			
Judge	aristocrat	1093	820	0.75	0.58	227	77	0.34	0.58	1001	743	0.74	0.58	Balanced						
Admiral	trading ari:	333	268	0.8	0.59	89	16	0.18	0.69	280	252	0.9	0.59	Balanced						
Mistress o	aristocrat	1110	822	0.74	0.57	209	84	0.4	0.64	1009	738	0.73	0.56	Balanced						
Builder	trading ari:	330	283	0.86	0.59	85	41	0.48	0.59	260	242	0.93	0.59	Balanced						
Chamber l	trading ari:	321	266	0.83	0.63	100	48	0.48	0.67	237	218	0.92	0.62	WIN CONDITION						
Warehouse	aristocrat	2789	1599	0.57	0.56	537	101	0.19	0.69	2601	1498	0.58	0.55	Balanced						
Czar	trading ari:	346	244	0.71	0.56	102	4	0.04	0.25	297	240	0.81	0.57	Balanced						
Administrator	aristocrat	2784	2013	0.72	0.55	521	204	0.39	0.64	2522	1809	0.72	0.54	Balanced						
Minister of tradi	ari:	325	252	0.78	0.58	97	11	0.11	0.45	277	241	0.87	0.59	Balanced						
Controller	aristocrat	1688	1098	0.65	0.55	334	105	0.31	0.67	1543	993	0.64	0.53	Balanced						
Patriarch	trading ari:	325	254	0.78	0.52	94	13	0.14	0.77	273	241	0.88	0.51	EARLY GAME SNOWBALL						
Pope	trading ari:	322	262	0.81	0.64	100	38	0.38	0.68	256	224	0.88	0.63	WIN CONDITION						
Author	aristocrat	3324	2912	0.88	0.54	578	392	0.68	0.58	2893	2520	0.87	0.54	Balanced						
Senator	trading ari:	351	291	0.83	0.57	109	36	0.33	0.75	284	255	0.9	0.55	EARLY GAME SNOWBALL						
Tax Man	trading ari:	333	177	0.53	0.61	88	0	0	0	283	177	0.63	0.61	WIN CONDITION						
Secretary	aristocrat	2255	1291	0.57	0.54	422	93	0.22	0.67	2087	1198	0.57	0.53	Balanced						
Weapon M	trading ari:	321	273	0.85	0.59	85	30	0.35	0.63	265	243	0.92	0.59	Balanced						
Weaving Mill	trading wo	0.73	0.56	0.8	0.61	0.68	0.53	Balanced	-0.33725	2.698	-0.44967	2.24833	-0.5396	0						
Wharf	trading wo	0.71	0.56	0.68	0.56	0.68	0.56	Balanced	-0.44967	2.698	-1.12417	1.124167	-0.5396	1.01175						
Lumberjack	worker	1	0.55	1	0.53	0.99	0.57	MUSTBUY	1.180375	2.0235	0.6745	0.449667	1.55135	1.349						
Gold Miner	worker	0.99	0.53	1	0.5	0.98	0.56	MUSTBUY	1.124167	0.6745	0.6745	-0.22483	1.4839	1.01175						
Fur Shop	trading wo	0.79	0.52	0.76	0.44	0.76	0.55	Balanced	0	0	-0.6745	-1.57383	0	0.6745						
Shepherd	worker	0.96	0.52	1	0.52	0.93	0.53	MUSTBUY	0.955542	0	0.6745	0.224833	1.14665	0						
Fur Trapper	worker	0.92	0.51	0.99	0.52	0.86	0.51	MUSTBUY	0.730708	-0.6745	0.618292	0.224833	0.6745	-0.6745						
Gold Smelter	trading wo	0.59	0.51	0.3	0.48	0.62	0.51	Balanced	-1.12417	-0.6745	-3.26008	-0.6745	-0.9443	-0.6745						
Ship Builder	worker	0.87	0.51	0.96	0.51	0.76	0.52	Balanced	0.449667	-0.6745	0.449667	0	0	-0.33725						
Czar and Carpenter	worker	0.67	0.5	0.88	0.47	0.45	0.55	Balanced	-0.6745	-1.349	0	-0.89933	-2.09095	0.6745						
Carpenter Workshop	trading wo	0.68	0.47	0.5	0.41	0.67	0.49	Balanced	-0.61829	-3.3725	-2.13592	-2.24833	-0.60705	-1.349						
Avg		0.81	0.521818	0.806364	0.504545	0.761818	0.534545													
Stdev			0.137642	0.025873	0.222313	0.05246	0.15862	0.024258												
Median			0.79	0.52	0.88	0.51	0.76	0.53												
MAD			0.12	0.01	0.12	0.03	0.1	0.02												

Card №	Type	Pick Rate	Win Rate	Early P%	Early W%	Late P%	Late W%	Status	mod z-s	mod z-s+1	mod z-s	mod z-s-1	mod z-s	mod z-s+1	mod z-s	mod z-s-1	re Late Win Rate
Harbor	tradingbui	0.69	0.57	0.83	0.49	0.61	0.6	Balanced	-0.22483	0.20235	0.858021	0	-3.70975	3.03525			
Bank	tradingbui	0.74	0.55	0.71	0.49	0.68	0.58	Balanced	0.096357	1.349	0.476678	0	-2.76545	2.36075			
Observato	building	0.4	0.53	0.06	0.42	0.68	0.54	Balanced	-2.08774	0.6745	-1.58893	-2.36075	-2.76545	1.01175			
Peterhof	tradingbui	0.77	0.53	0.82	0.51	0.71	0.54	Balanced	0.289071	0.6745	0.826243	0.6745	-2.36075	1.01175			
Theater	building	0.57	0.53	0.23	0.55	0.88	0.53	Balanced	-0.99569	0.6745	-1.04869	2.0235	-0.06745	0.6745			
Hospital	building	0.58	0.52	0.23	0.55	0.9	0.51	Balanced	-0.93145	0.33725	-1.04869	2.0235	0.20235	0			
Market	building	0.72	0.52	0.47	0.51	0.97	0.53	Balanced	-0.03212	0.33725	-0.28601	0.6745	1.14665	0.6745			
Academy	building	0.58	0.51	0.25	0.57	0.91	0.48	Balanced	-0.93145	0	-0.98514	2.698	0.33725	-1.01175			
Pub	building	0.82	0.51	0.7	0.47	0.9	0.56	Balanced	0.610262	0	0.4449	-0.6745	0.20235	1.68625			
Warehouse	building	0.71	0.51	0.44	0.49	0.98	0.52	Balanced	-0.09636	0	-0.38134	0	1.28155	0.33725			
Winter Pal	tradingbui	0.87	0.51	0.61	0.49	0.88	0.51	Balanced	0.931452	0	0.158893	0	-0.06745	0			
Customs	building	0.65	0.5	0.33	0.48	0.97	0.51	Balanced	-0.48179	-0.33725	-0.73091	-0.33725	1.14665	0			
Firehouse	building	0.59	0.5	0.25	0.47	0.89	0.52	Balanced	-0.86721	-0.33725	-0.98514	-0.6745	0.06745	0.33725			
Library	building	0.58	0.49	0.21	0.51	0.92	0.49	Balanced	-0.93145	-0.6745	-1.11225	0.6745	0.47215	-0.6745			
St. Isaac's	tradingbui	0.86	0.49	0.69	0.5	0.85	0.49	Balanced	0.867214	-0.6745	0.413121	0.33725	-0.47215	-0.6745			
Hermitage	tradingbui	0.84	0.48	0.75	0.43	0.82	0.49	Balanced	0.738738	-1.01175	0.603793	-2.0235	-0.87685	-0.6745			
Church of	tradingbui	0.82	0.47	0.75	0.46	0.8	0.47	Balanced	0.610262	-1.349	0.603793	-1.01175	-1.14665	-1.349			
Smolny Ca	tradingbui	0.75	0.47	0.66	0.39	0.72	0.49	Balanced	0.160595	-1.349	0.317786	-3.3725	-2.22585	-0.6745			
Potjomkin'	building	0.73	0.46	0.53	0.46	0.92	0.46	Balanced	0.032119	-1.68625	-0.09534	-1.01175	0.47215	-1.68625			
Catherine	tradingbui	0.86	0.45	0.59	0.54	0.89	0.43	Balanced	0.867214	-2.0235	0.095336	1.68625	0.06745	-2.698			
Avr		0.7065	0.505	0.5055	0.489	0.844	0.5125										
Stdev		0.123056	0.029411	0.232862	0.04392	0.105754	0.039481										
Median		0.725	0.51	0.56	0.49	0.885	0.51										
MAD		0.105	0.02	0.21225	0.02	0.05	0.02										

Card Name	Type	Pick Rate	Win Rate	Late P%	Late W%	Status	mod z-s	mod z-s+1	mod z-s	mod z-s-1	mod z-s	mod z-s+1	mod z-s	mod z-s-1	re Late Win Rate	
Pope	tradingaristocrat	0.81	0.64	0.88	0.63	WN CONC	0.33725	2.36075	0.112417	0.20235						
Chamber Maid	tradingaristocrat	0.83	0.63	0.92	0.62	WN CONC	0.562083	2.0235	0.562083	1.68625						
Tax Man	tradingaristocrat	0.53	0.61	0.63	0.61	WN CONC	-2.81042	1.349	-2.698	1.349						
Admiral	tradingaristocrat	0.8	0.59	0.9	0.59	Balanced	0.224833	0.6745	0.33725	0.6745						
Builder	tradingaristocrat	0.86	0.59	0.93	0.59	Balanced	0.899333	0.6745	0.6745	0.6745						
Weapon Master	tradingaristocrat	0.85	0.59	0.92	0.59	Balanced	0.786917	0.6745	0.562083	0.6745						
Judge	aristocrat	0.75	0.58	0.74	0.58	Balanced	-0.33725	0.33725	-1.46142	0.33725						
Minister of Fore	tradingaristocrat	0.78	0.58	0.87	0.59	Balanced	0	0.33725	0	0.6745						
Mistress of Cer	aristocrat	0.74	0.57	0.73	0.56	Balanced	-0.44967	0	-1.57383	-0.33725						
Senator	tradingaristocrat	0.83	0.57	0.9	0.55	EARLY GA	0.562083	0	0.33725	-0.6745						
Warehouse Mar	aristocrat	0.57	0.56	0.58	0.55	Balanced	-2.36075	-0.33725	-3.26008	-0.6745						
Czar	tradingaristocrat	0.71	0.56	0.81	0.57	Balanced	-0.78692	-0.33725	-0.6745	0						
Administrator	aristocrat	0.72	0.55	0.72	0.54	Balanced	-0.6745	-0.6745	-1.68625	-1.01175						
Controller	aristocrat	0.65	0.55	0.64	0.53	Balanced	-1.46142	-0.6745	-2.58558	-1.349						
Author	aristocrat	0.88	0.54	0.87	0.54	Balanced	1.124167	-1.01175	0	-1.01175						
Secretary	aristocrat	0.57	0.54	0.57	0.53	Balanced	-2.36075	-1.01175	-3.3725	-1.349						
Patriarch	tradingaristocrat	0.78	0.52	0.88	0.51	EARLY GA	0	-1.68625	0.112417	-2.0235						
Avr		0.744706	0.574706	0.793529	0.569412											
Stdev		0.104325	0.031082	0.123285	0.033338											
Median		0.78	0.57	0.87	0.57											
MAD		0.06	0.02	0.06	0.02											

Card Name	Type	Early Pick	Early Win Rate
Admiral	tradingaristocrat	0.18	0.69 -2.2933 0.449667
Weapon Master	tradingaristocrat	0.35	0.63 0 -0.89933
Senator	tradingaristocrat	0.33	0.75 -0.2698 1.798667
Pope	tradingaristocrat	0.38	0.68 0.4047 0.224833
Builder	tradingaristocrat	0.48	0.59 1.7537 -1.79867
Chamber Maid	tradingaristocrat	0.48	0.67 1.7537 0
Judge	aristocrat	0.34	0.58 -0.1349 -2.0235
Mistress of Cer	aristocrat	0.4	0.64 0.6745 -0.6745
Secretary	aristocrat	0.22	0.67 -1.7537 0
Warehouse Mar	aristocrat	0.19	0.69 -2.1584 0.449667
Controller	aristocrat	0.31	0.67 -0.5396 0
Administrator	aristocrat	0.39	0.64 0.5396 -0.6745
Author	aristocrat	0.68	0.58 4.4517 -2.0235
Median		0.35	0.67
MAD		0.05	0.03

As you can see, the nerfs definitely works for Tax Man and Mistress of Ceremonies, reducing their abnormal win rates from edition 1. However, other cards are also affected, and some cards jumped out to be significantly better than in edition 1 (e.g. Pope (or Abbott), Harbor). We suspect this is the result of the nerfs to other cards that maybe shouldn't have been nerfed, or due to the small sample size. We're going to keep the nerfs on Tax Man and Mistress of Ceremonies and adjust other cards we identified in the analysis of the Edition 1 deck in our Edition 3 deck.

## Card Balance Suggestions

Saturday, December 6, 2025 10:14 PM

We ran 9 total Monte Carlo Simulation, each with 1500+ games, with different variants of balance changes, and came to the balance changes below.

### Workers:

Changes:

Edition	Quant	Type	Name	Cost	Rubles	Points	Other	Abbrev	Edition	Quant	Type	Name	Cost	Rubles	Points	Other	Abbrev	change	change
1	1	trading worker	Gold Smelter	6	3	0	1 discount	W	3	1	trading worker	Gold Smelter	6	3	0	1 discount	W	2	0
1	1	trading worker	Weaving Mill	6	6	0	1 replaces	Wharf	9	2	trading worker	Weaving Mill	6	5	0	1 replaces	Wharf	1	-1
1	1	trading worker	Wharf	9	9	0	1 replaces	Wharf	9	3	trading worker	Wharf	14	6	0	1 replaces	Wharf	3	0

### Old Statistics:

Card Name	Type	Pick Rate	Win Rate	Early P%	Early W%	Late P%	Late W%	Status	mod z-*	mod z-*	mod z-*	mod z-*	mod z-*	mod z-*	mod z-*	mod z-*	mod z-*	
Weaving Mill	trading wt	0.73	0.56	0.79	0.59	0.69	0.55	Balanced	-0.49697	1.349	0.74195	5.376	-0.53041	0.49697				
Wharf	trading wt	0.74	0.55	0.73	0.58	0.7	0.54	Balanced	-0.37474	1.0173	-1.14665	4.7215	-0.44967	0.24853				
Lumberjack	worker	0.99	0.55	1	0.53	0.98	0.57	MUST	0.496889	0	0.33725	0.9443	1.349	1.64879	0.89933			
Fur Shop	trading wt	0.79	0.53	0.76	0.5	0.77	0.54	Balanced	0.423944	0.33725	0.6748	0	1.37385	0.49697				
Gold Miner	worker	0.98	0.53	1	0.51	0.97	0.55	MUST	0.423956	0.33725	0.6748	0	1.37385	0.49697				
Shepherd	worker	0.96	0.52	0.99	0.51	0.98	0.55	MUST	0.974278	-0.33725	0.6705	0	1.274956	0				
For Trapper	worker	0.92	0.51	0.99	0.51	0.98	0.55	MUST	0.974278	-0.33725	0.6705	0	1.274956	0				
Czar and Carpenter	worker	0.7	0.52	0.5	0.52	0.5	0.54	Balanced	-0.6745	-0.6745	0	0.6745	-1.9495	-1.12417				
Ship Builder	worker	0.97	0.52	0.96	0.5	0.97	0.54	Balanced	0.599556	-0.6745	0.4047	-0.6745	0	-0.99933				
Carpenter Workshop	trading wt	0.71	0.48	0.5	0.4	0.7	0.5	Balanced	-0.399556	-1.349	-2.698	-7.455	-0.44967	-0.6745				
Gold Smelter	trading wt	0.64	0.43	0.46	0.37	0.64	0.45	Balanced	-1.12417	-3.0325	-2.9678	-9.443	-0.89933	-1.7966				
Air		0.820909	0.514545	0.820364	0.501818	0.771818	0.511812											
StdDev		0.12094	0.05515	0.189796	0.062496	0.142155	0.034655											
Median		0.79	0.52	0.9	0.51	0.76	0.53											
MAD		0.09	0.02	0.1	0.01	0.09	0.03											

With these changes, we were able to:

- Nerf Weaving Mill and Wharf such that their early win rate is dropped significantly.
- Gold Smelter gets a deserving buff to its win rate.
- There's a significant reduction in the early win rate standard deviation.
- We do notice the low pick rate for Carpenter Workshop & Gold Smelter. However, we believe this is due to our player not seeing through enough depth to identify the benefit of having these two cards.

### Buildings:

No changes.

Changes were attempted to be made to the original deck. However, none of the statistics came out as balanced as how it was in the first edition deck.

### Statistics:

Card Name	Type	Pick Rate	Win Rate	Early P%	Early W%	Late P%	Late W%	Status	mod z-sco									
Harbor Building	trading building	0.73	0.53	0.76	0.46	0.54	0.51	Balanced	0.074742	1.349	0.74195	5.376	-0.53041	0.49697				
Storage Building	trading building	0.74	0.53	0.75	0.58	0.7	0.54	Balanced	-0.37474	1.0173	-1.14665	4.7215	-0.44967	0.24853				
St. Isaac's Building	trading building	0.8	0.55	0.72	0.53	0.77	0.52	Balanced	0.582083	0.80779	0.89959	1.1958	0.87495					
Herringbone Building	trading building	0.82	0.52	0.71	0.57	0.82	0.51	Balanced	0.713173	0.81749	0.89955	1.40116	0.91175					
Church Building	trading building	0.84	0.52	0.73	0.55	0.84	0.52	Balanced	0.813263	0.81749	0.89955	1.40116	0.91175					
Wine Cellar Building	trading building	0.86	0.53	0.76	0.58	0.86	0.53	Balanced	0.913353	0.81749	0.89955	1.40116	0.91175					
Bone Kiln Building	trading building	0.73	0.51	0.76	0.55	0.84	0.52	Balanced	-0.413242	0.81749	0.89955	1.40116	0.91175					
Monastery Building	trading building	0.89	0.51	0.72	0.56	0.89	0.51	Balanced	-0.70089	1.0173	0.89955	1.40116	0.91175					
Alley Building	trading building	0.87	0.51	0.72	0.56	0.89	0.51	Balanced	0.074742	1.349	0.74195	5.376	-0.53041	0.49697				
Academy Building	trading building	0.58	0.51	0.71	0.53	0.77	0.52	Balanced	-0.113153	-1.64018	1.09213	3.61132	-0.113153					
Carriage Stable Building	trading building	0.58	0.51	0.71	0.53	0.77	0.52	Balanced	-0.113153	-1.64018	1.09213	3.61132	-0.113153					
Church of St. Isaac Building	trading building	0.54	0.5	0.69	0.49	0.87	0.51	Balanced	0.081881	-0.87495	0.47219	0.42156	-0.113153					
Pub Building	trading building	0.82	0.5	0.69	0.47	0.89	0.54	Balanced	0.081786	-0.87495	0.47219	0.42156	-0.113153					
Customs House Building	trading building	0.64	0.5	0.69	0.47	0.89	0.54	Balanced	0.081786	-0.87495	0.47219	0.42156	-0.113153					
Firehouse Building	trading building	0.59	0.48	0.25	0.49	0.82	0.49	Balanced	0.131919	1.349	0.89832	0.29997	0.47474	1.349				
Market Building	trading building	0.77	0.48	0.49	0.46	0.86	0.51	Balanced	0.081786	0.47219	0.42156	0.131919	0.131919					
Post Office Building	trading building	0.72	0.47	0.49	0.46	0.85	0.51	Balanced	0.131919	0.47219	0.42156	0.131919	0.131919					
Warehouse Building	trading building	0.71	0.46	0.47	0.43	0.84	0.48	Balanced	-0.113153	0.37058	0.515172	1.44096	0.811753	-1.005				
Air		0.712706	0.030103	0.229091	0.370276	0.094205	0.611143											
StdDev		0.120796	0.05515	0.189796	0.062496	0.142155	0.034655											
Median		0.73	0.51	0.58	0.58	0.85	0.52											
MAD		0.09	0.01	0.10	0.00	0.09	0.01											

### Aristocrats:

Changes:

Edition	Quant	Type	Name	Cost	Rubles	Points	Other	Abbrev	Edition	Quant	Type	Name	Cost	Rubles	Points	Other	Abbrev	change	change
1	2	aristocrat	Mistress of Cer	18	6	3	a18		3	New std	aristocrat	Mistress c	20	6	3	a20	2	0	0
1	1	trading aristocrat	Tax Man	16	0	0	0	1 ruble per ta16	1	1	trading aristocrat	Miss	20	6	3	a20	2	0	0

### Old Statistics:

Card Name	Type	Pick Rate	Win Rate	Early P%	Early W%	Late P%	Late W%	Status	mod z-sco									
Tax Man	trading aristocrat	0.57	0.64	0.64	0.64	0.64	0.64	WIN CONE	-2.47317	1.68628	-1.85468	1.68625						
Mistress of Ceremonies	aristocrat	0.81	0.63	0.68	0.61	0.61	0.61	WIN CONE	0.224833	1.349	-0.50588	0.6745						
Pope	trading aristocrat	0.83	0.63	0.92	0.63	0.96	0.63	WIN CONE	0.449667	1.349	0.505875	1.349						
Builder	trading aristocrat	0.84	0.6	0.93	0.6	0.93	0.6	WIN CONE	0.562083	0.33725	0.590188	0						
Czar	trading aristocrat	0.88	0.6	0.78	0.6	0.78	0.6	EARLY GAH	-1.23658	0.33725	-0.6745	0.33725						
Weapon Master	trading aristocrat	0.85	0.6	0.94	0.6	0.94	0.6	BALANCED	0.6745	0.33725	0.6745	0.33725						
Admiral	trading aristocrat	0.79	0.59	0.89	0.59	0.89	0.59	BALANCED	-0.25398	0	0	0.25398						
Judge	aristocrat	0.78	0.59	0.77	0.59	0.77	0.59	BALANCED	-0.11242	0	0	-0.75881						
Patriarch	trading aristocrat	0.84	0.59	0.95	0.59	0.95	0.59	BALANCED	0.562083	0.33725	0.590188	0						
Senator	trading aristocrat	0.86	0.59	0.94	0.6	0.94	0.6	BALANCED	0.786917	0	0.6745	0.33725						
Chamber Maid	trading aristocrat	0.84	0.57	0.91	0.57	0.91	0.57	BALANCED	-0.1349	0	0	-0.75881						
Controller	aristocrat	0.67	0.57	0.66	0.57	0.66	0.57	BALANCED	-1.349	-0.6745	-1.68625	-1.01175						
Minister of Foreign Affairs	trading aristocrat	0.76	0.57	0.87	0.58	0.87	0.58	BALANCED	-0.33725	-0.6745	-0.84313	-0.33725						
Secretary	aristocrat	0.57	0.55															