Pimp.Fun Turn Generation Mathematics

Complete Mathematical Framework

BASE TURN SYSTEM

Core Mechanics

Base Rate: 2 turns per 10 minutes

= 12 turns per hour

= 288 turns per day

= 2,016 turns per week

Standard Turn Cap: 20 turns (without book keeper)
Turn Banking: REQUIRES Corrupt Book Keeper NFT

CORRUPT BOOK KEEPER SYSTEM

Book Keeper Types & Banking Limits

Street Book Keeper (Common NFT):
- Banking Capacity: 100 turns
- Cost: 5,000 $PIMP or find through discovery
- Special Ability: Tracks income more accurately (+5% income reporting)

Underground Accountant (Rare NFT):
- Banking Capacity: 200 turns
- Cost: 15,000 $PIMP or rare discovery
- Special Ability: Hides 10% of assets from raids

Corporate Finance Manager (Epic NFT):
- Banking Capacity: 350 turns
- Cost: 50,000 $PIMP or epic discovery
- Special Ability: Generates 1% daily interest on banked cash

Offshore Banking Specialist (Legendary NFT):
- Banking Capacity: 500 turns
- Cost: 150,000 $PIMP or legendary discovery
- Special Ability: Completely hides assets from heat/investigations

Swiss Account Manager (Mythic NFT):

- Banking Capacity: 750 turns
- Cost: 500,000 $PIMP or mythic discovery
- Special Ability: Can bank other players' turns (alliance feature)

Banking Mechanics

Without Book Keeper:
- Maximum turns held: 20
- Excess turns: Lost forever
- Turn generation stops at cap

With Book Keeper:
- Turns accumulate up to book keeper capacity
- Turn generation continues until cap reached
- Book keeper can be lost in raids (10% chance if raided successfully)
- Book keeper loyalty: Requires 1,000 $PIMP daily "payment" or they quit

TURN GENERATION MODIFIERS

NFT Holdings Bonuses (Multiplicative)

Genesis Pimp NFTs:
- Common: +5% turn generation (1.05x multiplier)
- Rare: +10% turn generation (1.10x multiplier)
- Epic: +20% turn generation (1.20x multiplier)
- Legendary: +35% turn generation (1.35x multiplier)
- Mythic: +50% turn generation (1.50x multiplier)

Special Bitches NFTs:
- Each Unique Bitch: +2% turn generation
- Complete District Set: +15% bonus
- Complete Rarity Set: +25% bonus

Vehicle NFTs:
- Common Vehicle: +3% turn generation
- Rare Vehicle: +7% turn generation
- Epic Vehicle: +15% turn generation

Territory Control Bonuses (Additive)

Basic Territory Bonus:
Per District Owned: +0.1 turns per 10 minutes

Territory Tier Bonuses:
Control 3+ Districts: +0.5 turns per 10 minutes
Control 7+ Districts: +1.0 turns per 10 minutes
Control 12+ Districts: +2.0 turns per 10 minutes
Control 20+ Districts: +3.0 turns per 10 minutes

Special Territories:
Capital District: +1.0 turns per 10 minutes
Financial District: +0.8 turns per 10 minutes
Red Light District: +0.6 turns per 10 minutes
Industrial District: +0.4 turns per 10 minutes

Alliance Participation (Multiplicative)

Alliance Member: +5% turn generation (1.05x)
Alliance Officer: +10% turn generation (1.10x)
Alliance Leader: +15% turn generation (1.15x)

Active War Bonuses:
Participating in War: +20% during active war
Winning War: +30% for 48 hours after victory
Losing War: -10% for 24 hours after defeat

$PIMP Staking Bonuses (Multiplicative)

Staking Tiers:
1,000 $PIMP: +5% turn generation (1.05x)
5,000 $PIMP: +10% turn generation (1.10x)
25,000 $PIMP: +20% turn generation (1.20x)
100,000 $PIMP: +35% turn generation (1.35x)
500,000 $PIMP: +50% turn generation (1.50x)

COMPLETE TURN CALCULATION FORMULA

Step-by-Step Calculation

1. Calculate Base Multiplicative Bonus:
   NFT_Multiplier = (1 + sum of all NFT bonuses)
   Alliance_Multiplier = (1 + alliance bonus)
   Staking_Multiplier = (1 + staking bonus)

$$Total\_Multiplier = NFT\_Multiplier \times Alliance\_Multiplier \times Staking\_Multiplier$$

2. Calculate Territory Additive Bonus:
$$Territory\_Bonus = (Districts\_Owned \times 0.1) + Tier\_Bonuses + Special\_Territory\_Bonuses$$

3. Final Turn Rate:
$$Turns\_Per\_10\_Minutes = (2 \times Total\_Multiplier) + Territory\_Bonus$$

4. Apply Maximum Cap:
   Maximum_Turn_Rate = 15 turns per 10 minutes (to prevent exploitation)
   $$Final\_Rate = min(Turns\_Per\_10\_Minutes, 15)$$

MATHEMATICAL EXAMPLES

Example 1: New Player

Assets:
- No NFTs
- No territories
- No alliance
- No staking

Calculation:
Base: 2 turns per 10 minutes
Multipliers: 1.0 (no bonuses)
Territory: 0 (no territories)
Final: 2 turns per 10 minutes

Daily Generation: 288 turns
Turn Cap: 20 turns (no book keeper)
Effective Daily Turns: 20 turns (capped)

Example 2: Mid-Tier Player

Assets:
- 1 Rare Pimp NFT (+10%)
- 1 Epic Bitch NFT (+20%)
- 5 Districts (+0.5 + tier bonus +0.5)
- Alliance Member (+5%)
- 10,000 $PIMP staked (+10%)
- Underground Accountant (200 turn banking)

Calculation:
NFT_Multiplier = 1 + 0.10 + 0.20 = 1.30
Alliance_Multiplier = 1 + 0.05 = 1.05
Staking_Multiplier = 1 + 0.10 = 1.10
Total_Multiplier = 1.30 × 1.05 × 1.10 = 1.5015

Territory_Bonus = (5 × 0.1) + 0.5 = 1.0

Turns_Per_10_Minutes = (2 × 1.5015) + 1.0 = 4.003
Final_Rate = 4.003 turns per 10 minutes

Daily Generation: 4.003 × 144 = 576.4 turns per day
Turn Cap: 200 turns (with book keeper)

Example 3: Whale Player

Assets:
- 1 Mythic Pimp NFT (+50%)
- 3 Legendary Bitch NFTs (+35% each)
- Complete District Set (+15%)
- 25 Districts (+7.0 territory bonus)
- Alliance Leader (+15%)
- 500,000 $PIMP staked (+50%)
- Swiss Account Manager (750 turn banking)
- Currently in winning war (+30%)

Calculation:
NFT_Multiplier = 1 + 0.50 + (3 × 0.35) + 0.15 = 2.70
Alliance_Multiplier = 1 + 0.15 + 0.30 = 1.45 (war bonus)
Staking_Multiplier = 1 + 0.50 = 1.50
Total_Multiplier = 2.70 × 1.45 × 1.50 = 5.8725

Territory_Bonus = (25 × 0.1) + 3.0 = 5.5

Turns_Per_10_Minutes = (2 × 5.8725) + 5.5 = 17.245
Final_Rate = 15 (capped at maximum)

Daily Generation: 15 × 144 = 2,160 turns per day
Turn Cap: 750 turns (with mythic book keeper)

TURN CONSUMPTION RATES

Activity Costs

Basic Actions:
- Prowl (discovery): 1 turn
- Attack territory: 1 turn
- Collect income: 1 turn
- Recruit thug: 1 turn

Advanced Actions:
- District hiring: 2 turns
- Crew war battle: 3 turns
- Raid enemy base: 5 turns
- Tournament entry: 2 turns

Special Actions:
- NFT fusion: 10 turns
- Territory fortification: 7 turns
- Alliance negotiation: 3 turns
- Market manipulation: 15 turns

Optimal Turn Usage Analysis

Casual Player (20 turns/day):
- 10 turns prowling
- 5 turns combat
- 5 turns income collection
= Sustainable casual play

Active Player (200 turns/day):
- 100 turns prowling (discovery focus)
- 50 turns combat/raids
- 30 turns territory management
- 20 turns income optimization
= Competitive progression

Whale Player (750 turns/day):
- 300 turns aggressive expansion
- 200 turns discovery farming
- 150 turns crew war participation
- 100 turns market activities
= Endgame domination

TURN BANKING ECONOMICS

Book Keeper Maintenance Costs

Daily "Salary" Requirements:
- Street Book Keeper: 500 $PIMP/day
- Underground Accountant: 1,000 $PIMP/day
- Corporate Finance Manager: 2,500 $PIMP/day
- Offshore Banking Specialist: 5,000 $PIMP/day
- Swiss Account Manager: 10,000 $PIMP/day

Missed Payment Consequences:
Day 1: Warning message
Day 2: Book keeper efficiency drops to 50%
Day 3: Banking capacity reduced by 50%
Day 4: Book keeper quits, all banked turns lost

Risk/Reward Analysis

Book Keeper Raid Vulnerability:
- 10% chance of capture during successful raid
- Captured book keeper can be ransomed for 50% of original cost
- Can be rescued within 24 hours by crew alliance
- Insurance available for 5% of book keeper value per day

Turn Banking ROI:
- Cost per banked turn capacity: varies by book keeper type
- Value of not losing turns: ~$50-100 per turn in end-game
- Break-even point: 30-60 days depending on activity level

BALANCE MECHANISMS

Anti-Exploitation Measures

Turn Generation Caps:
- Absolute maximum: 15 turns per 10 minutes
- Prevents infinite scaling with massive investments

Book Keeper Limitations:
- Only 1 book keeper active at a time
- Cannot be traded while turns are banked

- Loses loyalty if player inactive for 7+ days

Diminishing Returns:
- NFT bonuses cap at 200% total
- Territory bonuses cap at +10 turns per 10 minutes
- Alliance bonuses don't stack with multiple alliances

Economic Pressure Valves

Turn Sink Mechanisms:
- High-value activities require multiple turns
- Tournament entries consume turns
- Failed actions still consume turns
- Turn "insurance" costs $PIMP to guarantee success

Market Forces:
- Book keeper supply limited by discovery rates
- Book keeper maintenance creates $PIMP burn
- Turn overflow creates urgency to spend
- Competitive pressure forces turn optimization

IMPLEMENTATION NOTES

Technical Requirements

Server Infrastructure:
- Turn generation calculated every 10 minutes
- Banking system requires secure storage
- Book keeper NFTs need special metadata
- Turn overflow prevention mechanisms

Database Schema:
- Player turn balance (current)
- Player turn generation rate (calculated)
- Book keeper NFT status (active/inactive)
- Turn generation history (analytics)
- Book keeper payment history (loyalty tracking)

Balancing Considerations

New Player Experience:
- First book keeper should be discoverable within 1-2 days

- Tutorial explains turn banking importance
- Starter pack includes temporary book keeper

Endgame Scaling:
- Whale advantages are significant but not insurmountable
- Turn generation creates active gameplay requirements
- Book keeper maintenance prevents passive wealth accumulation

EXPECTED PLAYER BEHAVIORS

Turn Banking Strategies

Conservative Strategy:
- Maintain 50% turn capacity as buffer
- Focus on reliable book keeper maintenance
- Steady progression without risk

Aggressive Strategy:
- Push turn generation to maximum
- Reinvest all income into NFT acquisition
- Accept book keeper risk for faster growth

Competitive Strategy:
- Optimize turn usage for tournaments
- Bank turns specifically for war periods
- Coordinate with alliance for maximum efficiency

Economic Implications

$PIMP Token Demand:
- Book keeper purchases: 500K+ $PIMP daily burn
- Book keeper maintenance: 100K+ $PIMP daily burn
- Staking for turn bonuses: Long-term token lock

NFT Market Effects:
- Book keeper NFTs become essential utilities
- Pimp NFTs gain utility value beyond speculation
- Territory control becomes more valuable with turn bonuses

This mathematical framework ensures that turn generation scales meaningfully with investment while maintaining balance through caps, maintenance costs, and risk mechanisms. The corrupt book keeper system adds strategic depth and creates sustainable token utility.