



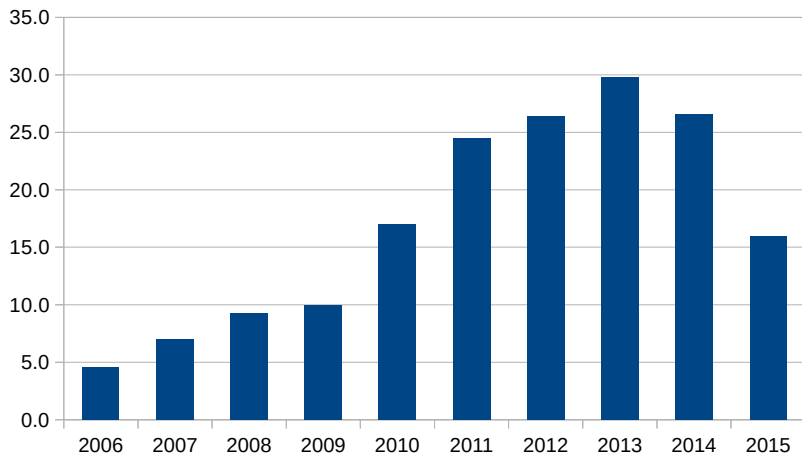
A New Variant of Baccarat for VIP Players

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Annual VIP Baccarat Revenue in Macau (Billions of US \$)



Source: Schwartz, David G. (2016) UNLV Center for Gaming Research,
<http://gaming.unlv.edu/abstract/macau.html>.

A brief history of Baccarat

- **Baccara Chemin de Fer.** Originated in France (c. 1850s or 1860s).
A two-person game (Player vs. Banker).
See Ethier and Gámez, *Games* **4** (2013) 711-737.
- **Baccarat.** Originated in Havana, Cuba (1950s). Evolved from Baccara Chemin de Fer. Differences include:
 - A 5% commission on Banker wins was added.
 - Player's strategy was fixed, as was Banker's strategy.
 - The game became house-banked with bets offered on both Player's hand and Banker's hand.
- **Baccara à Deux Tableaux** (a.k.a. **Baccara Banque**). Originated in France (c. 1830s or 1840s). A three-person game (Player 1 vs. Banker and Player 2 vs. Banker).
See Ethier and Lee, *Games* **6** (2015) 57-78.
- **Two-Table Baccarat.** Related to Baccara à Deux Tableaux in the same way that Baccarat is related to Baccara Chemin de Fer.

Rules of Two-Table Baccarat

Summary: Two-Table Baccarat comprises two simultaneous games of Baccarat, Player 1 vs. Banker and Player 2 vs. Banker, but with only one Banker hand and with a reduction in the commission on Banker wins.

In more detail,

- Player 1, Player 2, and Banker each receive two cards face down, dealt from an eight-deck shoe.
- Anyone who has a natural turns over his cards. If one Player has a natural, play continues between the other Player and Banker.
- As at Baccarat, Player 1 draws on 5 or less, stands on 6 or 7. Player 2 does the same. Third cards are dealt face up.
- Banker draws or stands according to a *Table of Play*.
- Bets are settled as in Baccarat, both Player 1 vs. Banker and Player 2 vs. Banker, except that the commission on winning Banker bets is 4%.

How is Banker's strategy determined?

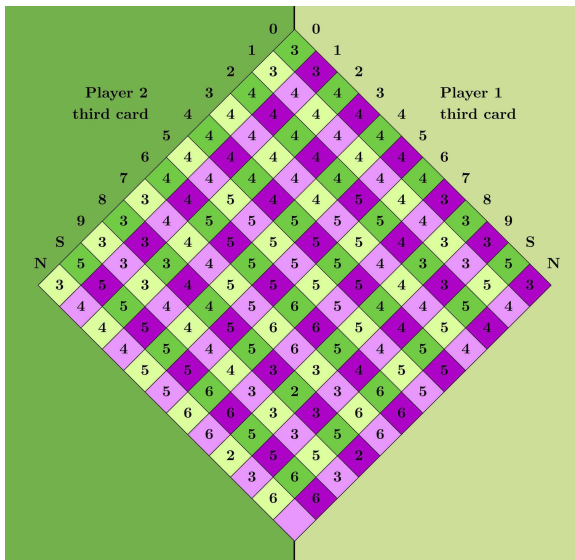
Key premise: It should not depend on the amounts bet.

Example

- Suppose Player 1's third card is 7 and Player 2's third card is 8. What should Banker do?
- If he were playing Baccarat against Player 1, he would draw on 0–6 and stand on 7. $(169, 105, 41, 9, 9, 9, 9, -41)/273$
- If he were playing Baccarat against Player 2, he would draw on 0–2 and stand on 3–7. $(191, 127, 63, -1, -33, -33, -33, -33)/273$
- In Two-Table Baccarat, he draws on 0–3 and stands on 4–7. $(180, 116, 52, 4, -12, -12, -12, -37)/273$

In general, Banker's drawing strategy is specified by a *Table of Play*.

Banker's *Table of Play* at Two-Table Baccarat



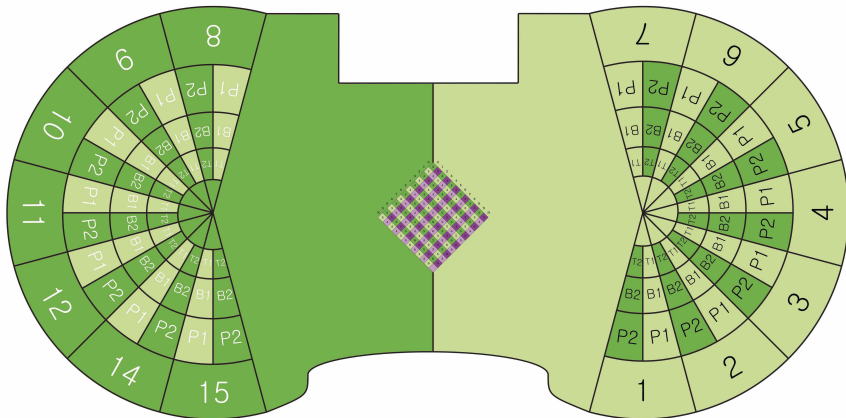
House edge*, Baccarat vs. Two-Table Baccarat

bet	payoff odds	edge (%)
Player	1 to 1	1.24
Banker	19 to 20	1.06
Tie	8 to 1	14.36

bet	payoff odds	edge (%)
Player (P1; P2)	1 to 1	0.93
Banker (vs. P1; vs. P2)	24 to 25	0.91
Tie (P1-B; P2-B)	9 to 1	8.11
Three-Way Tie (P1-P2-B)	90 to 1	15.35

*pushes included, 8-deck shoe

Possible Layout for Two-Table Baccarat



Commission-free Baccarat and Two-Table Baccarat

- In **EZ Baccarat**[®], the 5% commission on Banker wins is eliminated and instead, *if Banker wins with a three-card 7, bets on Banker are considered pushed.*
 - The effective commission is about 4.9%. The house edge on Banker bets becomes 1.02% (instead of 1.06%).
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- In **Two-Table Baccarat**, a similar rule is feasible: The 4% commission on Banker wins is eliminated and instead, *if Banker wins with a three-card 7 against a three-card Player hand, bets on Banker (vs. that Player) are considered pushed.*
 - The effective commission is about 4.2%. The house edge on Banker bets becomes 1.00% (instead of 0.91%).

Executive Summary

Why will VIP players be attracted to Two-Table Baccarat?

- It has a **historical connection** to Baccarat and is very Baccarat-like; but it offers **more choices** than Baccarat.
- The **rules are clear** at a glance.
- It has a **smaller house edge** on Player and Banker bets than does Baccarat. In the case of the Player bets, this is clear without calculation. In the case of the Banker bets, this is suggested by the reduced commission on winning bets.

Why will casino management want to offer Two-Table Baccarat?

- It will **attract VIP Players**.
- Even with a reduced house edge, it will **earn substantial revenue**. (The game is intended for VIP players.)
- A **commission-free version** is available.

Origin of Two-Table Baccarat

- Invented by Stewart Ethier and Jiyeon Lee (2015).
- Intellectual property rights owned by TVC, University of Utah (Technology and Venture Commercialization).

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