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The Effects of the Formula One Chinese Grand Prix on Urban Consumption: Evidence from Short Event Windows in Shanghai

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Abstract. Consumption changes associated with the Shanghai F1 Grand Prix are concentrated in the few days around the race. Accordingly, this paper examines publicly reported indicators for accommodation, transportation, commercial retail, food and leisure, and tourism and entertainment within three- to seven-day event windows. The dataset contains 46 observations from 2017-2019 and 2024-2026, each linked to a source URL, and 40 observations meet the criteria for the main regression.The remaining six cover periods longer than seven days, duplicate other indicators, report an extreme value for a single outlet, or cover fewer than three days, and are retained only in raw-data sheet for verification. Five early observations in the main sample are calculated from reported attendance figures.The Shanghai race was suspended from 2020 to 2023, those years are left blank. The regression uses $ln(1+\frac{g_i}{100})$ as the dependent variable, the regression includes a no-intercept industry dummy variables and applies HC3 standard errors. The estimated geometric mean increases are 74.59% for accommodation, 32.84% for transportation, 32.45% for commercial retail, 81.68% for food and leisure, and 17.85% for tourism and entertainment. Accommodation, transportation, commercial retail, and tourism and entertainment are statistically significant at the 5% level, whereas the food-and-leisure group has only three observations and a wide confidence interval. Thirty-four observations are either reported precisely or can be reconstructed from attendance counts. Monthly fixed-effects models for 2014-2025 and a Shanghai-Shenzhen comparison present a different picture: some local indicators rise during race week, but net effect on citywide monthly consumption is not stable.

Keywords: F1 Chinese Grand Prix, event economy, urban consumption, short event window

1. Introduction

The peak visitor flow generated by the Shanghai F1 Grand Prix lasts only a few days. During the same period, nonlocal spectators book rooms, travel to the circuit, and spend money, so nearby businesses may experience the change directly. Once these few days are averaged over an entire month, however, the increase may become small. Short-window and monthly data should therefore be examined separately.

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Shanghai has hosted the F1 Chinese Grand Prix since 2004. Commercial activity later expanded from the circuit to Jiading Auto City and the central urban area.

Changes in the composition of spectators are especially noteworthy. Nearly 160,000 visits were recorded over the three race days in 2019. When the event returned in 2024 after a four-year suspension, attendance exceeded 200,000 visits; domestic spectators from outside Shanghai accounted for about 70%, and overseas spectators for about 10%. In 2025, the share of overseas spectators rose to 15.25%.

Many visitors come from outside Shanghai. Attendance, however, measures visitor flow and cannot be treated directly as additional consumer spending.

The existing literature focuses mainly on industrial structure, city branding, infrastructure, and total tourism, while paying less attention to industry changes during the 3-7 days around a single race. Public monitoring data can show which locations become busier, but these local changes are not equivalent to net citywide consumption. Short-window data are used here for industry comparisons, whereas monthly statistics are used only to determine whether such local fluctuations appear in citywide aggregates.

The original wording used on each source webpage is retained during data entry. The 46 records contain the year, industry, indicator, comparison period, event window, precision classification, and URL. Forty observations covering 3-7 days enter the main regression, while the other six remain in the raw-data sheet. Visitor flow remains visitor flow; bookings and revenue are treated as distinct indicators, and figures covering different geographic areas are not added together. The paper also reports a 2024-2026 subsample, monthly fixed-effects estimates for Shanghai, and a Shanghai-Shenzhen comparison.

The additional early-year data consist of historical attendance records, while more detailed industry indicators are available after the event resumed. The main model uses 40 observations. The paper, Excel workbook, and analytical program use the same division between the main and supplementary observations.

The Shanghai race was suspended from 2020 to 2023, so the data series ends after 2019 and resumes only in 2024. Years without a race are left missing. Filling them with zeros would incorrectly turn 'no race' into 'zero event effect,' while linear interpolation has no practical meaning. The analysis covers only years in which the race was actually held and therefore does not claim a continuous six-year growth path.

2. Literature review and research expectations

2.1. Urban economic effects of major sporting events

Chinese studies generally find that industries respond differently to major events. Mao Fengfu, Zheng Fang, and Zhu Shuqi examine 22 major sporting events in 70 large and medium-sized Chinese cities and find a stronger effect on the tertiary sector than on the secondary sector [1].

Li Yanli examines how sporting events contribute to urban consumption environments [2]. Using data for 30 provinces from 2014 to 2023, Cui Liming and Wang Jiahong find that the release of consumption potential also varies with income and region [3].

These studies do not support the assumption that all industries grow at the same rate.

Substitution in consumption and leakage of revenue separate visitor growth from net economic growth. Baade and Matheson argue that ex ante estimates of the World Cup often omit these factors and may also overlook crowding-out effects [4]. Fourie and Santana-Gallego find that tourism inflows depend on the type of event, season, and participating countries [5]. The literature provides

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no basis for assuming that race-period visitor flow and net urban consumption change in the same proportion.

The counterfactual is the most difficult issue. Race week is busier than an ordinary week, but the difference also reflects seasonality, holidays, and retailer promotions. When annual or regional aggregates are used instead, a shock lasting only a few days can disappear. Input-output studies, panel regressions, and tourism-flow analyses estimate different objects. Publicly available information cannot support a rigorous treatment group. The short-window regression therefore retains only verifiable associations, while the monthly analysis tests whether they remain visible in citywide aggregates.

Spectator spending represents only one component of the host city's economic returns. Hotel, transportation, and restaurant revenue may appear quickly, while brand exposure and repeat visits may occur later. Rescheduled local spending, profit leakage, and the cost of public services work in the opposite direction. A short window captures a demand peak but does not provide a complete cost account. Consequently, industry growth rates cannot be converted directly into the event's total economic contribution.

2.2. Research on F1 events and its boundaries

Studies of F1 events in Europe and Brazil reach different conclusions. Storm, Jakobsen, and Nielsen examine European Grand Prix regions from 1991 to 2017 and find no stable positive effects on regional GDP, employment, or tourism [6]. An input-output study of São Paulo, by contrast, finds that event spending is transmitted to the regional economy through tourism and services [7]. The contrasting findings should be interpreted in light of differences in regions, methods, and statistical scales. Even if transactions peak during the Shanghai race week, substitution in consumption, revenue leakage, and public costs remain.

An F1 Grand Prix normally returns to the same circuit each year. Spectators, teams, and sponsors develop relatively stable travel patterns, and organizers have opportunities to adjust transportation and commercial activities. The Shanghai race was suspended from 2020 to 2023. Its return in 2024 coincided with the first home appearance of a Chinese driver and the event's twentieth anniversary, so demand in the earlier regular years may differ from that in the post-resumption period.

The same event can produce different results at different scales. Visitor flow around the circuit may be high while regional GDP or annual employment shows no visible change. Industry patterns during race week and citywide monthly statistics are therefore reported separately rather than combined into a single 'overall economic effect.'

2.3. Research gap and expectations

Existing research is valuable because it places event effects at the urban or regional scale and shows that industry, income levels, and event type can alter the results [1, 3, 5]. Panel studies, however, answer questions about average effects, while input-output studies depend on assumed spending and multipliers. Neither approach readily shows which industries are affected first during the few days of an F1 event in Shanghai or whether these local peaks enter citywide monthly totals.

Research on F1 events has not produced a single conclusion. European regional studies find no stable effects on GDP, employment, or tourism [6]. While the São Paulo study traces event spending into tourism and service industries [7]. This difference cannot be explained solely by local conditions. The scale of analysis and the construction of the counterfactual are also important: long-

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term regional indicators may dilute short-lived peaks, whereas input-output tables do not automatically deduct substitution in consumption or revenue leakage.

The volume of publicly available data on Shanghai increased markedly after the race resumed, with disclosures covering hotels, transportation, shopping districts, and tourism and entertainment sites [8-11]. However, the records are dispersed, use different comparison periods, and consist mainly of attendance figures in the earlier years. Recent Shanghai F1 research still lacks a short-window sample that has traceable sources, is organized by industry, and can be checked against monthly citywide totals. This paper addresses that measurement gap by first comparing public indicators over 3-7-day windows and then using monthly models and a Shanghai-Shenzhen comparison to test the boundaries of the findings. The approach cannot replace a rigorous causal design, but it can distinguish 'race-week activity' from a 'net citywide effect.'

2.4. Research questions and expectations

The analysis addresses two questions. First, do publicly reported indicators generally rise during race week in the five industry groups, and which results are relatively stable? Second, can the increase still be detected in citywide monthly statistics? Positive changes are expected to be more evident in accommodation, transportation, and commercial retail. If the direction remains unchanged after approximate and lower-bound values are removed, the result is less dependent on reporting conventions. The monthly event coefficient may instead be obscured by seasonality and macroeconomic fluctuations.

3. Data and research design

3.1. Data sources and sample

The short-window dataset contains 46 observations from 2017-2019 and 2024-2026. The main sources are the Shanghai Municipal People's Government, the General Administration of Sport of China, the Shanghai Municipal Administration of Culture and Tourism, commercial monitoring in Jiading District, and the official Formula 1 website. Platform and company data cited on government webpages are used as supplementary sources. After filtering by event window and duplicate indicator, 40 observations remain in the main sample. Each value has a URL, and missing industry-year observations remain missing.

The dataset retains the wording used on the source webpage. 'Year-on-year growth in hotel bookings' and 'increase in the occupancy rate of hotels near the circuit relative to the previous week' are both assigned to accommodation, but their indicator names are not merged. Visitor flow at commercial businesses is not converted into sales. The source table records both the reposting webpage and the original reporting entity. For attendance growth, the numerator and denominator are retained so that the regression value can be reconstructed from the calculation.

Historical attendance is first checked against 2016. Over the three days of that year's event, cumulative attendance reached 160,000 visits, of which 140,000 were race spectators.

In 2017, the two attendance figures rose to 165,000 and 145,000, producing increases of 3.13% and 3.57%, respectively [8-13].

The corresponding figures remained 165,000 and 145,000 in 2018, so both year-on-year changes are zero [14]. No smoothing is applied.

The 2019 attendance observation is handled differently. The official Formula 1 website reports a 10.34% year-on-year increase in weekend attendance at the Shanghai race, so no reconstruction

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from approximate counts is needed.

The same webpage reports a 30% year-on-year increase for race day [15]. Because race day covers only one day, this record is retained in the raw-data sheet but excluded from the 3-7-day regression.

The one-day observation is not deleted because the source is authentic and its scope is clear. It is excluded from the main model only because the event window required by the instructor begins at three days.

The Shanghai Municipal People's Government later reported that weekend attendance was close to 160,000 visits [16]; this figure is used only for cross-checking.

Because the early observations measure venue arrivals or race attendance, they are classified under tourism and entertainment. They do not represent hotel, retail, or restaurant revenue. Public webpages for 2017-2019 do not report comparable growth rates for the latter three industries, so the additional years alter only the tourism and entertainment group. The period covered becomes longer, but industry coverage does not expand accordingly.

Table 1. Data levels and uses

Data level	Period	Main variables	Use
Public short-window indicators	Race periods in 2017-2019 and 2024-2026	Increase, industry, comparison period, and precision	Main regression
Monthly retail sales in Shanghai	2014-2025	Total retail sales and year-on-year growth	Monthly robustness check
Star-rated hotels in Shanghai	2014-2025	Occupancy rate and average room rate	Monthly robustness check
Inbound tourism in Shanghai	2014-2025	Inbound visitor arrivals	Monthly robustness check
Shanghai-Shenzhen retail sales	Commonly available months	Monthly log difference in retail sales between the two cities	Supplementary comparison

Sources: Compiled by the author from public webpages of the Shanghai Municipal Bureau of Statistics, the Shenzhen Municipal Bureau of Statistics, and the Shanghai Municipal People's Government.

3.2. Variable construction

The data sources are grouped into four levels, as outlined in Table 1, which specifies their observation periods, core variables and corresponding empirical uses.

The short-window increase, g_i, is entered as reported in the source. 'A year-on-year increase of 17%' is recorded as 17, and 'a 9.4% increase over the previous week' is recorded as 9.4.

Attendance figures are calculated as $g_t = (\frac{x_t}{x_{t-1}} - 1) \times 100\%$. They are marked as derived_exact in the dataset, while the numerator and denominator are stored separately in 'Historical Event Attendance Data.csv.'

'Doubled' is recorded as 100 and marked approximate; 'more than doubled' is assigned the conservative lower bound of 100.

The model uses $y_i = \ln(1 + \frac{g_i}{100})$. The zero for 2018 results from identical published attendance figures in two consecutive years. It has a clear meaning and is not missing.

Visitor flow, bookings, occupancy rates, sales, and operating revenue all enter the dependent variable even though their units differ. The logarithmic transformation only makes the magnitudes of the increases easier to compare; grouping observations by industry does not eliminate differences in

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indicator definitions. The Excel workbook retains the original percentages, indicator names, and comparison periods, while the text reports geometric mean increases.

The percentage distribution is strongly right-skewed, so the arithmetic mean is easily pulled upward by large values. The food-and-leisure group has only three observations, one of which reaches 284.43%. The industry mean of $\ln(1+\frac{g}{100})$ is therefore calculated first and then converted back to a percentage using $[\exp(\beta_s)-1]\times 100\%$. The raw values are unchanged, and different indicators are not assumed to measure the same economic quantity. This transformation reduces the influence of the largest observation on the group summary but does not resolve differences among the underlying indicators.

3.3. Model specification

The main model is specified as a no-intercept regression with industry dummy variables: $y_i=\sum_s \beta_s D_{is}+\varepsilon_i$. D_{is} denotes industry, and β_s is the sample mean of $\ln(1+\frac{g_i}{100})$ for that industry. The conversion back to a percentage is $[\exp(\beta_s)-1]\times 100\%$. HC3 standard errors are used. The model has no randomized treatment, parallel-trends assumption, or common control group; the coefficients are interpreted only as average changes in the publicly reported indicators.

In the no-intercept model, each industry dummy coefficient equals that industry's mean, which avoids comparison with an omitted reference category. HC3 standard errors address heteroskedasticity and high-leverage observations. However, these standard errors cannot compensate for the limited sample size accommodation has eight observations, while food and leisure has only three, so the precision of the two estimates naturally differs. Table 3 reports observation counts and confidence intervals; p-values are not used as the sole basis for interpretation.

The model itself is simple; the main difficulty lies in the sample. The tourism-and-entertainment group combines early attendance figures with post-resumption indicators for attractions and box-office revenue, while the accommodation group combines bookings, occupancy rates, and prices. The transformed values can be estimated together, but their economic meaning must still be interpreted using the original fields. More complex standard errors cannot remove this limitation.

The short-window results are also estimated for three restricted samples. The first contains 34 values that are either reported precisely or can be reconstructed and excludes approximate figures such as 'doubled' and lower bounds. The second contains 27 observations whose comparison periods are the previous week, an ordinary period, an adjacent period, or the preceding edition of the event. The third contains only the 35 main-sample observations from 2024-2026. The monthly regressions continue to use the F1 event month as the main variable, control for year and calendar-month fixed effects, and use Newey-West standard errors with three lags.

Because the 2017-2019 additions consist only of tourism attendance records, the 2024-2026 sample must be reported separately. Differences between the periods may reflect temporal changes, differences in indicator coverage, or changes in disclosure practices. Restricted samples are used to examine sensitivity to data coverage; statistical significance does not determine which sample is preferred.

4. Short-window facts and descriptive statistics

Early attendance figures do not show the large increases reported after the event resumed.

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In 2017, weekend spectator attendance rose by 3.57% from 2016 and cumulative attendance rose by 3.13%. Both measures were unchanged in 2018, while weekend attendance increased by 10.34% year on year in 2019.

Accommodation indicators are reported more frequently for 2024-2026.

Shanghai hotel bookings increased by 63% year on year in 2024. In 2025, the occupancy rate at the Ruili Hotel in Auto City increased by 24% year on year. In 2026, hotel bookings within three kilometers of the circuit increased by 125%.

The three observations cover different geographic areas and are listed together only because they belong to the same industry; they do not form a continuous series.

The transportation group has only four observations, so its estimate is less precise than that for accommodation.

In 2024, average daily entries and exits at Shanghai Circuit Station increased by 57.8% relative to the 2019 event. In 2025, railway arrivals rose by 30% from the previous week. In 2026, average daily exits at Shanghai Circuit Station increased by 32% from the preceding edition of the event.

Each source's original comparison period is retained. Imposing a common comparison period would require additional assumptions.

Commercial retail and tourism and entertainment data are concentrated mainly in the post-resumption period.

In 2024, visitor flow and operating revenue at ten key commercial businesses in Jiading were both about twice the level of an ordinary weekend.

By 2026, operating revenue at major commercial complexes in Jiading had increased by 5.73% year on year and 9.4% month on month. Visitor arrivals at nine scenic attractions and Jiabei Country Park increased by 20.97% year on year.

Table 2 presents the distribution of observations. Because the geographic coverage and comparison periods differ, the increases are not added together.

Table 2. Industry distribution of short-window observations

Industry	N	Median increase (%)	Minimum (%)	Maximum (%)	Exact observations
Accommodation	8	79.50	17.00	216.00	7
Food and leisure	3	30.00	20.00	284.43	3
Commercial retail	14	16.00	3.87	100.00	11
Tourism and entertainment	11	10.34	0.00	100.00	9
Transportation	4	31.00	15.00	57.80	4

Note: The increases refer to different geographic areas and comparison periods and cannot be added directly.

5. Main regression results

Table 3. Industry regressions for 3-7-day event windows

Industry	Log coefficient	HC3 standard error	Geometric mean increase (%)	95% CI (%)	p-value	n
Accommodation	0.557	0.129	74.59	[35.64, 124.73]	0.000	8
Transportation	0.284	0.075	32.84	[14.63, 53.95]	0.000	4
Commercial retail	0.281	0.073	32.45	[14.84, 52.75]	0.000	14

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Table 3. (continued)

Food and leisure	0.597	0.460	81.68	[-26.23, 347.45]	0.194	3
Tourism and entertainment	0.164	0.063	17.85	[4.23, 33.24]	0.009	11

Note: The dependent variable is $\ln(1+\frac{g_i}{100})$. OLS is estimated with no intercept and a set of industry dummy variables. Bracketed ranges are HC3-robust 95% confidence intervals.

For the 40 observations in the main sample, the geometric mean increases for accommodation, transportation, commercial retail, and tourism and entertainment are 74.59%, 32.84%, 32.45%, and 17.85%, respectively.

The p-values for all four groups are below 0.05. The point estimate for food and leisure is higher, at 81.68%, but this industry has only three observations.

One of the three food and leisure observations is 284.43%, widening the estimated interval to -26.23% to 347.45%; the estimate is not significant at the 5% level. Table 3 describes industry means for publicly reported observations. Interpreting them as net increases in consumption across Shanghai would exceed what the sample can establish.

The 95% interval for accommodation, whose point estimate is 74.59%, is clearly narrower than that for food and leisure. This does not give the accommodation data a causal interpretation. It only indicates that the eight available accommodation observations are less dispersed on the logarithmic scale. Every interval in the table depends on the locations that were selected for public reporting.

The 17.85% estimate for tourism and entertainment is the logarithmic-scale mean of 11 observations with different definitions; it is not a forecast for a particular attraction or edition of the race. The accommodation sample underlying the 74.59% estimate also combines bookings, occupancy rates, and prices near the circuit. The regression summarizes the public records on a common transformed scale but cannot estimate the additional monetary value of consumption in Shanghai.

The early data enter only the tourism and entertainment group.

When 2024-2026 is estimated separately, the group's geometric mean increase is 31.48%. Adding five weekend attendance observations for 2017-2019 reduces the estimate to 17.85%.

Two of the early values are zero. The high post-resumption values for attraction visits, tourism spending, and box-office revenue do not represent every year.

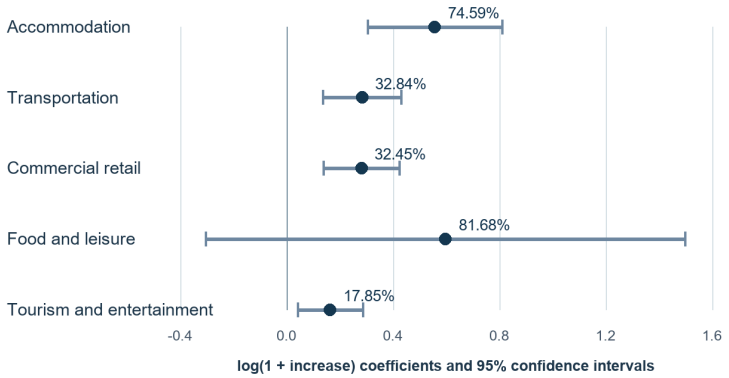


Figure 1. Industry regression coefficients for short event windows around the Shanghai F1 Grand Prix

Source: Calculated from Table 3. Percentages next to the points are obtained using $[\exp(\beta_s)-1]\times 100\%$.

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6. Robustness checks

6.1. Reporting precision and comparison periods

Table 4. Geometric mean increases across short-window samples

Industry	Main sample (%)	Exact-value sample (%)	Adjacent-period sample (%)	Interpretation
Accommodation	74.59	71.24	100.71	Same direction
Transportation	32.84	32.84	39.38	Three comparison observations
Commercial retail	32.45	18.37	40.43	Same direction
Food and leisure	81.68	81.68	24.90	Two comparison observations
Tourism and entertainment	17.85	9.92	17.35	Historical attendance lowers the mean

Note: The main sample contains 40 observations covering 3-7 days. The adjacent-period sample contains 27 observations, with at least two for each industry. The restricted 2024-2026 sample is reported in the accompanying Excel workbook.

The exact-value sample contains 34 observations.

The geometric mean increases for accommodation, transportation, commercial retail, food and leisure, and tourism and entertainment are 71.24%, 32.84%, 18.37%, 81.68%, and 9.92%, respectively.

The direction is unchanged for all five groups, but the changes in magnitude should not be ignored.

The largest changes occur in commercial retail and tourism and entertainment.

The former falls from 32.45% to 18.37%, while the latter falls from 17.85% to 9.92%. The omitted observations are imprecise reports such as 'doubled' and lower bounds for box-office revenue.

The adjacent-period sample contains 27 observations. The tourism-and-entertainment estimate is 17.35%, with a p-value of 0.120 and a confidence interval that crosses zero.

The restricted 2024-2026 sample does not change the estimates for accommodation, transportation, commercial retail, or food and leisure; the estimate for tourism and entertainment is 31.48%. Only the tourism-and-entertainment estimate changes because the early observations were added exclusively to that group. Table 4 retains the short-window robustness results, while the full restricted-sample results are provided in the Excel workbook.

6.2. Monthly fixed-effects results

Table 5. Baseline monthly models for Shanghai

Outcome variable	Estimated effect in the F1 event month	Unit	HAC p-value	N	Conclusion
Year-on-year growth in retail sales	-10.71	percentage points	0.480	118	Not significant
Occupancy rate of star-rated hotels	3.33	percentage points	0.509	140	Not significant

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Table 5. (continued)

Occupancy rate of five-star hotels	3.50	percentage points	0.524	140	Not significant
Average room rate at star-rated hotels	3.65	%	0.216	140	Not significant
Average room rate at five-star hotels	5.07	%	0.158	140	Not significant
Inbound visitor arrivals	41.63	%	0.272	140	Not significant

Note: The models control for year and calendar-month fixed effects. Newey-West standard errors use three lags.

In all six monthly baseline models, the event-month coefficient is not statistically significant at the 5% level. The estimated effect on year-on-year growth in retail sales is -10.71 percentage points, and the 95% interval crosses zero. Hotel occupancy, average room rates, and inbound tourism have positive coefficients, but statistical uncertainty remains large. Peaks at the circuit, hotels, and shopping districts over three to seven days are diluted in monthly aggregates, while the shifting date of the Spring Festival, macroeconomic consumption cycles, and missing months remain in the residuals.

6.3. Supplementary Shanghai-Shenzhen comparison

Table 6. Relative effect on retail sales in Shanghai and Shenzhen

Sample	Relative effect (%)	HAC p-value	N	Assessment
All common months	1.60	0.845	108	Not significant
Excluding 2020-2022	-7.34	0.009	79	Significant but sample-sensitive
Years in which the race was held	-6.76	0.007	69	Significant but sample-sensitive

Note: The outcome is the difference between the log of monthly retail sales in Shanghai and the log of monthly retail sales in Shenzhen. This two-city design is not a rigorous causal DID.

The Shanghai-Shenzhen comparison changes substantially with the sample period. For all common months, the relative effect in the event month is 1.60% ($p = 0.845$). It is -7.34% after the pandemic years are excluded and -6.76% when only years in which the race was held are retained. The sign reverses with the sample choice, and statistical significance is not stable. This comparison of citywide monthly aggregates does not support a causal conclusion, but it is also consistent with localized increases during race week.

7. Discussion

The largest increases in the sample occur at Shanghai Circuit Station, commercial complexes in Jiading, hotels near the circuit, and tourism and entertainment sites. Weekend attendance changed much more gradually from 2017 to 2019. Once these early observations are included, the tourism-and-entertainment estimate is no longer driven solely by large post-resumption values.

The increases in accommodation and transportation are consistent with the travel patterns of nonlocal spectators. Hotel bookings, intercity arrivals, and local transfers occur within a similar period, so bookings, occupancy rates, and station passenger flows rise together. Commercial retail and food and leisure depend more heavily on shopping-district activities and business decisions. A

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doubling at one outlet or in one district cannot represent the entire industry. The high point estimate for food and leisure is also related to its sample of only three observations.

Industry responses also differ in timing. Nonlocal spectators may book rooms and arrive in Shanghai several days in advance, so transportation and accommodation respond first. Spending on food, retail, and attractions occurs mainly after arrival and is also affected by the race schedule and weather. The source reports use different comparison periods, including year-on-year, month-on-month, and ordinary-weekend comparisons. Restricting the window to 3-7 days reduces but does not eliminate these differences in timing. The industry ranking indicates only the relative position of groups within this sample.

The short-window and monthly results appear to conflict, but they describe different statistical objects. The short-window analysis summarizes indicators reported for race week, whereas the monthly analysis uses citywide aggregates. Once local peaks enter a monthly measure, they are also affected by other areas, other weeks, and substitution in consumption within the same month. The available monthly coefficients do not show a stable direction.

Observations from locations near the circuit cannot support a claim that every industry across Shanghai grows at the same time. Public webpages are more likely to report strong-performing locations, while geographic coverage and comparison periods are inconsistent. Visitor flow and bookings are not realized consumer spending. Moreover, only attendance data are available for 2017-2019. The current sample can neither calculate the precise increase in citywide spending nor identify a causal treatment effect.

The meaning of the term 'increase' requires careful qualification is 'increase.'

In the reports, an increase may refer to station entries, bookings, occupancy rates, or sales. All these indicators reflect race-week activity, but they belong to different stages of a transaction and do not share a common monetary unit. They enter the industry regression to compare the magnitudes of reported changes on a logarithmic scale, not to assemble a complete urban account. If readers ignore the original fields and look only at the converted percentages, the model may create the false impression of a common measurement basis. The paper therefore retains indicator names, geographic coverage, and comparison periods so that these differences remain visible alongside the results.

The 2024 race was the first after the suspension and coincided with the home debut of a Chinese driver and the event's twentieth anniversary. Ticket-stub promotions and citywide activities expanded further in 2025-2026. Earlier webpages mainly reported circuit attendance, while later sources added attractions, box-office revenue, and tourism spending. Period conditions and indicator definitions changed together, and the available data cannot separate the two.

The original webpages remain traceable, but publishers do not provide a complete sampling frame. Reports are more likely to select locations with obvious growth, while sites with no growth or a decline rarely appear. Retaining the two zero observations from 2018 is insufficient to correct for reporting-selection bias. Reliable industry comparisons would require continuous daily transactions, mobility flows, and consistently defined data for comparable weeks without the event.

Even after additional years are included, the sample remains unbalanced. Only attendance figures are available for 2017-2019, while hotel, transportation, shopping-district, and tourism indicators appear only in 2024-2026. Reporting is more detailed in recent years, and post-resumption promotion is also more intensive. The tourism and entertainment coefficient falls from 31.48% to 17.85% when the earlier years are included, showing that the result depends on the period covered. The current data cannot determine whether the event's effect was genuinely weaker in the early years.

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Using 2016 as the historical calculation base and then observing the reported increase in 2019 restores part of the timeline, but early hotel and shopping-district data are still absent. The main value of the 2017-2019 observations is that the tourism-and-entertainment estimate is no longer based only on the post-resumption period. This tradeoff is limited but specific.

8. Conclusions

In this paper, the 'effect on urban consumption' refers only to associations observed at specific locations during the few days around race week. The short-window data show that most public indicators for accommodation, transportation, commercial retail, and tourism and entertainment increased, while the food and leisure result is strongly affected by a small sample and a large value. At the citywide monthly scale, the event effect has no stable direction. The analysis neither adds industry growth rates together nor converts regression coefficients into additional consumer spending for Shanghai.

Future evaluation requires continuous data measured on a consistent basis. Daily figures for visitor flow, transactions, accommodation, and transportation should be published before and after the event, with costs, substitution in consumption, and revenue leakage reported separately. Daily payment transactions, mobile-phone signaling data, and comparable weeks without the race would help identify the net effect.

Tourism partnerships can integrate ticket-stub discounts into visitor itineraries. Half-day or full-day routes can connect Jiading's automotive culture, urban attractions, performances, and nighttime consumption with the periods before and after the race. Ticketing, transportation transfers, and hotel bookings could be offered through a common entry point. Activities should avoid arrival and departure peaks and encourage some spending on the night before the race and after spectators leave the circuit. Whether these measures extend visitor stays can be evaluated through combined-ticket redemptions, attraction visits, and next-day accommodation data.

Business-travel products can be designed separately from ordinary spectator packages. For team members, sponsors, and employees of event-related companies, hotel meetings, small-scale supply-and-demand matching, visits to automotive businesses, and post-race exchanges can be incorporated into existing itineraries instead of organized as a separate large event. Jiading can host industry visits and meetings, while the central urban area can accommodate lodging, dining, and evening business exchanges. Reliable transport links are needed between the two areas. Business-travel conversion should be evaluated using meeting bookings, extensions into weekdays, and repeat corporate visits rather than circuit footfall as a proxy for completed transactions.

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