Digital advertising activities in Japan’s services producer price index

Moegi Inoue,
Bank of Japan

1 This presentation was prepared for the WSC. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the event.
Digital Advertising Activities in Japan’s SPPI

Moegi Inoue
Bank of Japan
Research and Statistics Department
Introduction
Basic Information of Japan’s SPPI

Scope

- Services provided by businesses to other businesses and governments (excluding services provided to households).

Purpose

- Capture developments in supply–demand conditions for service products provided to business and government.
- Used as a deflator of GDP (mainly used in corporate sector).

Index structure

- Compiled and published only on commodity basis (not industry basis).
Basic Information of Japan’s SPPI

**Time of release**

- Monthly
- Preliminary indexes are released on the 18th business day of the month following the reference month.

**Sources for weights**

- "2015 Updated Input–Output Tables"
- Other various statistics are also employed as source data (including “Economic Census for Business Activity”).

**Rebasing**

- Every five years (base year and weights are updated).
- At the time of rebasing, we incorporate new services and reconsider the pricing and quality adjustment methods.
**Rebasing**

- Japan has rebased SPPI this June from 2010 base to 2015 base.
- We have expanded the coverage of two digital services; “Web portals”, ”Internet advertising” (as shown in yellow).

<table>
<thead>
<tr>
<th>Item</th>
<th>2010base</th>
<th>2015base</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Weights</td>
<td>Weights</td>
</tr>
<tr>
<td>Internet related services</td>
<td>9.2</td>
<td></td>
</tr>
<tr>
<td>Internet advertising</td>
<td>6.8</td>
<td></td>
</tr>
</tbody>
</table>

**Split & Expand**

- **Web portals** expanded to 14.3
- **Internet support services** expanded to 4.1
- **Internet data centers** expanded to 1.2
- **Internet advertising** expanded to 10.9

**Expand**
Web Portals
Web Portals

✓ “Web portals” offers searching function by intermediating companies and customers online.

(Ex.) Hotel Reservation

Note: The above commission rate and profit are fictitious.
Web Portals

(Ex.) Restaurant Information

Posting
$300 (per month)

Booking
$2 (per booking)

Searching
$0

Booking
$0

Survey posting & booking fee

Note: The above commission rate and profit are fictitious.
Each web portal has a different business model, even though they deal with the same products or services.

<table>
<thead>
<tr>
<th>Web Portal Categories</th>
<th>Fixed Fee</th>
<th>Fee according to the Volume of the Purchase</th>
<th>Mixed Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Per Shop</td>
<td>Per transaction</td>
<td>Fixed Unit Price</td>
</tr>
<tr>
<td>Shopping / Auction</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Restaurant Information</td>
<td>✔</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Real Estate Information</td>
<td>✔✔</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Job Information</td>
<td>✔</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Hotel Reservation</td>
<td>✔</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Hometown Tax</td>
<td>✔</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Others</td>
<td>✔</td>
<td></td>
<td>✔</td>
</tr>
</tbody>
</table>

Note: Not all the web portals are included to the above table.
✓ Many kinds of web portals are newly incorporated to our new index (2015 base).
Internet Advertising
“Internet advertising” provides advertising space via ad network operated by web portals.

<table>
<thead>
<tr>
<th>Advertising Categories</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reservation Advertising</td>
<td>Advertisement transacted with fixed price using a non-auction method.</td>
</tr>
<tr>
<td>Programmatic Advertising</td>
<td>Listing Ad</td>
</tr>
<tr>
<td></td>
<td>Advertisement on the search screen linked to the keyword searched by the consumer using auction method.</td>
</tr>
<tr>
<td></td>
<td>Display Ad</td>
</tr>
<tr>
<td></td>
<td>Advertisement whose effect is assumed to be high based on the content of website and the consumer’s browsing history, etc. using auction method.</td>
</tr>
<tr>
<td></td>
<td>Video Ad</td>
</tr>
<tr>
<td>Affiliate Advertising</td>
<td>Advertisement whereby if a consumer views an Internet advertisement and then performs some predetermined action, the media or consumer is paid some remuneration.</td>
</tr>
</tbody>
</table>
## Internet Advertising

(Ex.) Reservation advertising

### Media Sheet

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Listing fee</td>
<td>$15,000</td>
</tr>
<tr>
<td>CPM (Cost Per Miles)</td>
<td>$0.8</td>
</tr>
<tr>
<td>Guaranteed impressions</td>
<td>1,875,000</td>
</tr>
<tr>
<td>Assumed CTR (Click Through Rate)</td>
<td>0.29%</td>
</tr>
<tr>
<td>Listing Period</td>
<td>1 week</td>
</tr>
<tr>
<td>Listing page</td>
<td>Top Page</td>
</tr>
</tbody>
</table>
Internet Advertising

(Ex.) Programmatic advertising

Platform which allows publishers to automatically select and sell ad spaces which maximize ad revenues.

Platform which allows advertisers to automatically select and buy ad spaces that best matches predetermined conditions, such as target customers and fees.

Advertisements can be efficiently distributed by bundling ad spaces across several sites.
Internet Advertising

(Ex.) Listing ads

Google

Paris apartments for rent

About 19,500,000 results (0.63 seconds)

Apartment Rentals In Paris | The Finest Homes, Min 3 Nights


(Ex.) Display ads

If you click, “Ads by Google” is displayed

(Ex.) Video ads
Internet Advertising

(Ex.) Affiliate advertising

Advertisers → Affiliate agency → Media

Resister → Listing ads → Pay the fee based on the amount of conversion.

Once the audience click the ads, jump to the link and put tag

Conversion

- Purchase products
- Resister membership
- Download apps

Track activities
Our pricing method is as below.

<table>
<thead>
<tr>
<th>Advertising Categories</th>
<th>Pricing Method</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reservation Advertising</td>
<td>List Price</td>
<td>Impression</td>
</tr>
<tr>
<td></td>
<td>- Specify the media and ad space</td>
<td></td>
</tr>
<tr>
<td>Programmatic Advertising</td>
<td>Listing Ad</td>
<td>Click</td>
</tr>
<tr>
<td></td>
<td>Unit Value Method</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Specify the search engine and advertiser’s industry</td>
<td></td>
</tr>
<tr>
<td>Display Ad</td>
<td>Unit Value Method</td>
<td>Click</td>
</tr>
<tr>
<td></td>
<td>- Specify the ad network and advertiser’s industry</td>
<td></td>
</tr>
<tr>
<td>Video Ad</td>
<td>Unit Value Method</td>
<td>View</td>
</tr>
<tr>
<td></td>
<td>- Specify the ad network and advertiser’s industry</td>
<td></td>
</tr>
<tr>
<td>Affiliate Advertising</td>
<td>Unit Value Method</td>
<td>Conversion</td>
</tr>
<tr>
<td></td>
<td>- Specify the advertiser’s industry</td>
<td></td>
</tr>
</tbody>
</table>
We designed the composition of sample prices based on the amount of real transaction value, which is published by one of the biggest agencies in Japan.

Programmatic and affiliate ads are expanded in 2015 base index.
The Cost per click is expanded in 2015 base index.
The Cost per conversion and cost per view are newly incorporated.

Composition of Sample Prices by Unit of Sample Prices

- Others
- Per View (for Video Ad)
- Per Conversion
- Per Click

2010年基準 2015年基準
2010base 2015base
Price Trends in Digital Activities
The index of “Web portals” is rising especially these days reflecting increase in listing fees at real estate and job search web portals.

Gradual seasonal trends can be observed.
The index of “Internet advertising” is rising reflecting increase in demand.
Seasonal trend is clear like TV and newspaper advertising.
Looking at the Decomposition of Year-on-Year Change, the price of listing ads has been rising due to increase in demand under the situation that the ads space are comparably limited.
Comparing the decomposition of Y/Y change in 2015 base and that in 2010, the impact of the Internet is greater and that of papers is smaller.

Decomposition of Year-on-Year Change

Note: “Papers” include newspaper, magazine, and leaflet.
The all item index shifted upward after late 2017 because of the price increase in “Web portals” and “Internet advertising”.
This index implies that the price has been rising at least B to B transaction as opposed to the discussions that the price tends to decrease under digitalization.

As these digital services only charge the fee on businesses, not on consumers, these price trends can be observed only in SPPI, not in CPI. It is important to capture the price trend of digital services in SPPI.
Thank you for your attention

Moegi Inoue
Price Statistics Division
Research and Statistics Department
BANK OF JAPAN
Email:moegi.inoue@boj.or.jp