# DATA SOURCES FOR TRANSACTIONS AND APPRAISALS. PRACTICAL CHALLENGES/DIFFICULTIES


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CPPI HANDBOOK 2ND DRAFT CHAPTER **8**

PREPARATION OF AN INTERNATIONAL HANDBOOK ON COMMERCIAL PROPERTY PRICE INDICATORS

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# BACKGROUND

- Commercial property market is thin.
  - Few transactions.
  - Heterogeneity is much stronger.
  - Especially in comparison with the housing market.
- Practical problems relating to data highly likely.
  - Not being able to obtain enough transactions to construct an index.
  - Not enough sufficiently detailed information to perform quality adjustment.
    - And technical facilities more important for commercial property e.g. IT infrastructure.

# BACKGROUND: CONTINUED

- *Registrations of transactions when ownership changes*.
  - Should give verifiable transaction or market price.
  - Indices so derived are referred to as transaction-based indices.

- *Appraisals that give an assessment of value*.
  - Administrative systems e.g. valuations revenue authorities for taxation purposes or by companies for annual accounts.
  - Valuations for other specific purposes.
  - Not generally purpose designed for constructing "official" CPPIs &/or other Indicators.
  - Indices, so derived, are referred to as appraisal-based indices.

# EXISTING INDICES: THE CONSTRAINTS OF DATA

- Data limitations can have repercussions for conceptual basis of index.
- For most official purposes, the target or ideal index is one that is based on transaction prices.
- Few National Statistical Offices compile CPPIs e.g.
  - *Statistics Denmark* computes quarterly Index using SPAR (Sale Price Appraisal Ratio) method.
    - Uses **sales data** from an electronic land registration system.
  - *ECB* computes interim indices based **on appraisal prices supplemented by better national data** where the latter exist.
  - *Hong Kong* uses **repeat sales** methodology (transparent and highly liquid property market).

# EXISTING INDICES: THE CONSTRAINTS OF DATA & IMPACT ON CONCEPTUAL BASIS

- Investment perspective is relevant for the role that the CPPI may play in the oversight of the financial system.....but
    - Different from the real asset perspective taken from national accounting & official statistics purposes.
- Most compilers of official statistics look to national accounts.
    - For most official purposes, target index is based on transaction prices.
        - A CPPI follows the acquisitions approach where the index reflects the transaction price when the property is acquired.
        - i.e. the price paid when the ownership is transferred.

# EXISTING INDICES: THE CONSTRAINTS OF DATA & IMPACT ON CONCEPTUAL BASIS

- Potential to use appraisals as a proxy for market prices.
  - ✓ Subject to appropriate protocols relating to basis of valuations.
  - ✓ Some indices compiled using a combination of transactions and appraisals.
- .....and some other positive properties.
  - ✓ Appraisals based on transaction price evidence.
  - ✓ Often share same goal of tracking movements in market prices.
  - ✓ Can track same properties (but quality adjustment may be needed).

# TRANSACTIONS: PRACTICAL DATA-RELATED DIFFICULTIES

- *A lack of transparency*.
  - From complexities in sale contracts.
    - Transfers of commercial property can be very intricate.
      - Leasehold/freehold; shared facilities; parts of building.
    - Or from the evasion of duties imposed by revenue authorities.
  - Complication factors such as the existence of tenancy agreements, and planning consent for redevelopment etc., can impact on expected future returns & affect transaction price.
    - These factors may not always be recorded along with the price in official registries etc.

- *A lack of timely data from a transparent source that can be independently verified*.
  - Official data on transaction prices can be difficult to obtain.
  - The sale of a commercial property may not be registered until some months after the sale.
  - The recorded price cannot be verified independently as to whether it was the actual transaction price (previous slide refers).
    - Reliance on policing of administrative system.

# TRANSACTIONS: PRACTICAL DATA-RELATED DIFFICULTIES

- *Small numbers of transactions*.
  - The buying and selling of commercial property can be relatively infrequent.
  - Limits the use of data source in compiling frequent indices (quarterly, monthly etc.), particularly in smaller commercial property markets.
    - Methods for dealing with small sample sizes in this context are discussed in Chapters 5 & 6.

# TRANSACTIONS: PRACTICAL DATA-RELATED DIFFICULTIES

- Commercial properties are relatively heterogeneous.
- Requires mechanisms to ensure a property price index tracks the prices of like-for-like properties over time.
    - Low numbers of transactions and limited information on the properties being transacted can preclude traditional quality adjustment methods to account for the change in the mix of properties sold.

- Practical difficulties often lead to a lack of observable prices in consecutive periods.
    - Needed to facilitate the computation of an index that is not confounded by.
        - Lack of data.
        - Changes in the different mixes of commercial properties and property characteristics entering the index at each computation.
- Methodologies for dealing with such inadequacies exist.
    - As long as the transactions don't completely dry up during market down-turns.
- Methodologies are referred to in earlier chapters.

# TRANSACTIONS: LACK OF HARMONISATION

| | Statistics Denmark | Hong Kong |
|---|---|---|
| Classification of property | • Mixed (residential and business**).** Business use has to be at least 25%.<br>• Business only.<br>• Factories and warehouses.<br>• Agriculture (but excludes corporate sales). | ▪ Offices.<br>▪ Retail.<br>▪ Industrial |
| Price data & index construction | • Price recorded in Land Registration System.<br>• SPAR method: ratio of purchase price to appraisal value.<br>• Excludes “atypical” sales/properties e.g. Where sold by local authority or where bundle of properties sold. | • Price recorded in Agreement of Sale & Purchase.<br>• Price per “saleable” floor area.<br>• Repeat sales.<br>• Quality adjusted by rateable (rental) value (similar to SPAR).<br>• All leasehold. |

# TRANSACTIONS: OTHER DATA-RELATED ISSUES.....

- Transaction-based indices cheaper to develop.
  - Extract transaction price from readily available database.
- Appraisers rely on transaction price evidence to estimate “market value.”
  - But numbers and timeliness of transactions and lack of detailed information on properties transacted, can confound situation beyond the capabilities of available statistical techniques.
  - For these reasons appraisal-based indices can prevail even though not the preferred approach for constructing official statistics.
  - Appraisal-based indices can overcome some of the difficulties associated with transaction-based indices.

- Typical problems relating to administrative data.
- Lack of harmonisation.
  - Extent of non-comparability not known.
- Lack of international accepted guidelines on coverage, methodology, classifications.

# VALUATIONS: PRACTICAL DATA-RELATED DIFFICULTIES

- Obtained from.
    - Existing administrative systems.
        - E.g. where valuations are undertaken by tax authorities as a basis for levying taxes or by corporations for filing company accounts.
    - Special data gathering exercises carried out for specific purpose of computing an index.
    - Valuations undertaken for portfolio management or for providing collateral against a bank loan, or for internal accounting between different parts of a business.
        - Can be infrequent and are often unregulated.

# VALUATIONS: ADMINISTRATIVE SYSTEMS

- ✓ User has limited influence over the composition of data. For example.
  - ✓ Definitions.
  - ✓ Collection of supplementary information.
    - ✓ Required for index computation but not for collection of taxes. E.g. price-determining characteristics for computing "constant quality" price index
  - ✓ Can represent an expert and objective judgement on how much a property would sell.
  - ✓ If undertaken regularly can avoid collection costs of customised data collection.
  - ✓ Potential data source for exploitation at minimal cost.

- Access to relevant datasets may be limited.
- Infrequent and subject to significant time-lags.

# SYSTEMATIC VALUATIONS

*Valuations undertaken specifically for price index used to benchmark changes in commercial property values and for constructing appraisal-based indices as substitutes for transaction-based indices.*

- ✓ Custom-designed for the specific purpose of producing a CPPI.
  - ✓ Should avoid some pitfalls associated with use of administrative data.
  - ✓ Definitions, survey design and quality assurance of the data are more under the control of collection agent.

- Lack of international guidelines relating for valuations.
  - Valuations undertaken for specific purposes e.g. submission of a tax return - may operate within guidelines laid down by Government/professional body but can vary between countries.
    - Same for official CPPIs.
  - Rely on judgement.
  - Can be differences between one set of valuations and another.

# COMMERCIAL VALUATIONS

*Valuations collected by commercial data suppliers for portfolio management & for collateral*

- ✓ Private sector organisations collect detailed data on commercial properties (prices, property characteristics, property condition etc.) & compute various indicators.
  - ✓ E.g. valuations, investment return, and rent per $^{m2}$ etc.
  - ✓ Surveyors estimate the potential future return from an asset as well as the value of the property itself.
- ✓ Can be frequent and cover major markets in depth.
- ✓ Index compilers have the potential to control for the mix of properties within each market.
- ✓ Data available for different property sectors such as the retail, office, industrial and commercial residential sectors etc.

# COMMERCIAL VALUATIONS: CONTINUED

*Valuations collected by commercial data suppliers for portfolio management & for collateral*

- Unlikely to be free of charge.
- Collected to meet specific requirements of professional portfolio managers.
    - Unlikely to fully align with the statistical requirements of NSIs.
- Coverage may be limited to professionally managed property portfolios only.
    - Generally focused on those properties, which fall within the professionally managed property sector, no representative samples of the universe of properties or transactions.
- Concepts can vary.
    - Valuation rules and guidelines can vary considerably from one country to another as well as between individual surveyors within a country.
    - Confounds international comparisons or index aggregation.
- Some indices “self-reported”.
- In USA, some valuations by internal done by the funds themselves.

# VALUATIONS: PRACTICAL DATA-RELATED DIFFICULTIES

*Valuations for the financing or re-financing of commercial property.*

- Valuation rules insufficient to entirely overcome pressure on appraisers to bias appraisals toward valuations that support the lending transactions.
    - Unless appraisers hired by independent agencies.
        - Adds to the range of uncertainty around some valuations, depending on the purpose and motivation.
        - A “95% confidence range” is of the order +/- 20% of the property value.
    - Valuations over-influenced by past prices resulting in smoothed index (generic to appraisal-based indices).
        - Not so good at identifying turning points.
    - The potential for compiling indices depends on statutory and industry information standards requirements.

# VALUATIONS: SUMMARY

- Computation depends on purpose.
- Lack of harmonisation.
- The potential for compiling indices depends on statutory and industry information standards requirements.
    - These can vary between and within countries.

# COMMERCIAL PROPERTY PRICE INDICES: DATA FOR WEIGHTS

- Most indices are transaction-weighted rather than stock-weighted.
  - Conceptual basis of a CPPI should determine weights.
    - Monitoring commercial property inflation experienced by purchasers - use transaction prices and weights based on value of transactions.
    - Valuing commercial property stock for wealth measurement and measuring indebtedness - use value of commercial property stock.
  - Data on stock obtained from land registry or a census of commercial property.
  - Data on transactions obtained from land registry.
    - Re-weight if transactions not representative of stock.
  - A more detailed discussion in Chapter 4.
  - Index calculation more sensitive to prices.

# DATA RELATING TO LAND PRICES/VALUES

- Data sources same as for commercial buildings.
    - Land Registries, tax office records, valuation offices, other valuers, real estate agents, local municipalities.
    - But the availability of data on land prices is relatively sparse (more so than for residential property or for commercial buildings).
        - Not always accessible.
- Characteristics of all data sources.
    - Plots of identical size in same location can vary in price e.g. if one plot being sold for house construction has a nice view and another doesn't.
    - Need relatively prescriptive descriptions (transactions & valuations).
    - Need to convert to a unit values e.g.  price per hectare.

# DATA RELATING TO LAND PRICES/VALUES: CONTINUED

- For a “transactions” database.
    - More records relating to land prices in rural areas than in urban areas due to scarcity of urban land.
    - Sample sizes are likely to be small at and below the regional level, and for different types of land use.
- Problems of interpretation.
    - Transactions can be speculative - anticipating a change in use.
    - International comparisons confounded by absence of land use information and a lack of an internationally agreed classification.
    - Freehold versus leasehold properties (long-term ground leases) is an added complication.

# OVERALL CONCLUSIONS

- Prominent practical problems relating to *transaction data.*
    - Few transactions.
    - Not being able to sufficiently perform quality adjustment.
        - Heterogeneity & lack of detailed information.
    - Limited transparency.
- Also prominent problems with *valuation data.*
    - Collected for a variety of purposes.
        - Monitoring of property prices, portfolio valuations, taxation.
        - Valuation protocols vary.
- Transaction-based & appraisal-based indices all generally trying to obtain market value: subject to appropriate measurement protocols.

# OVERALL CONCLUSIONS

STATUS OF AVAILABLE INDICES & COMPARABILITY ISSUES ARISING:

COMPARABLE, AGREED PROTOCOLS = √
NON-COMPARABLE, NO AGREED PROTOCOLS = X
UNCLEAR = ?

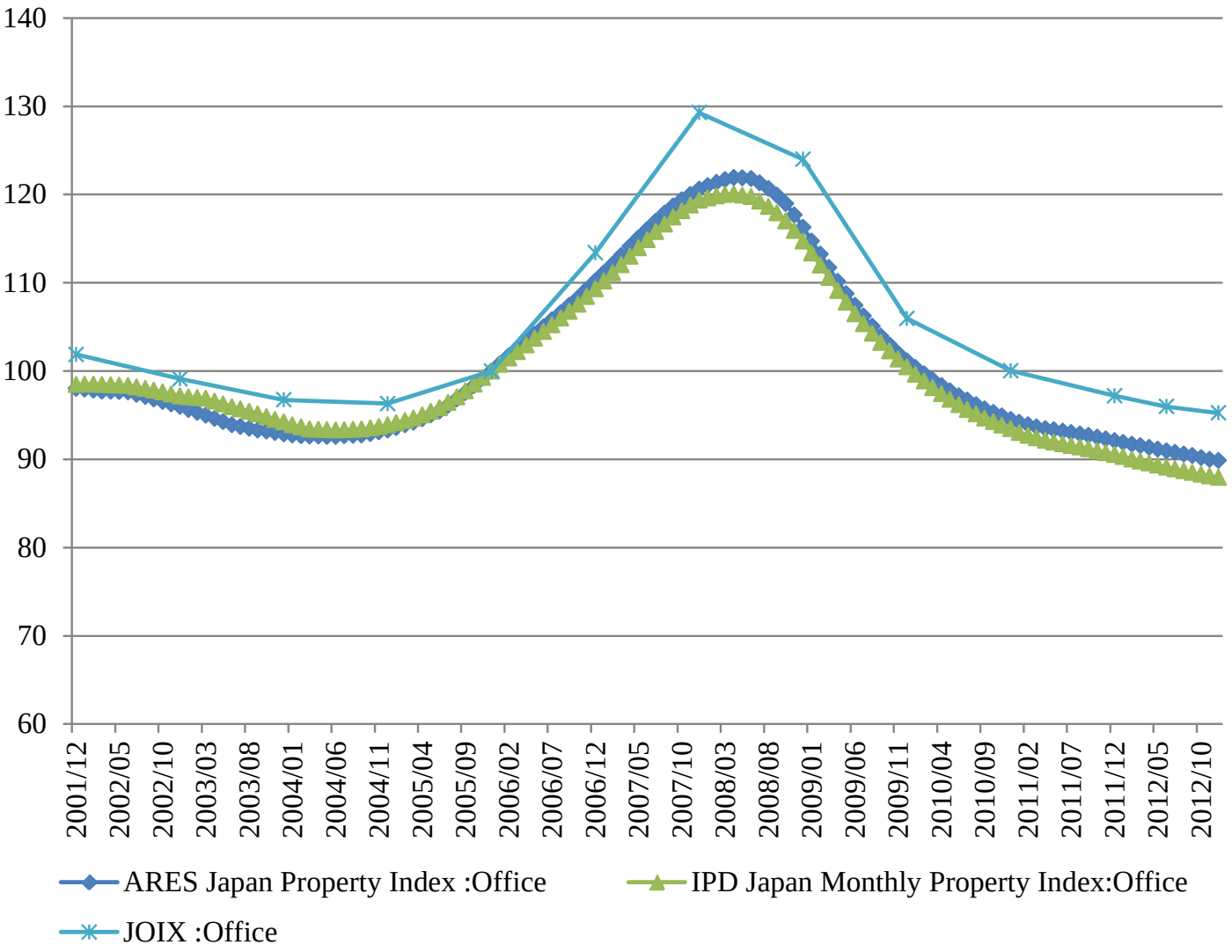
| | | Transactions | Valuations |
|---|---|---|---|
| Comparability | Coverage | ? | X |
| | Classifications | X | X |
| | Protocols for recording "market" price | ✓ | X |
| | Index methodology | ✓ | X |
| International protocols needed | | | |

# JAPAN

| Survey | Organisation | Use | Source | Coverage | Frequency | Availability* |
|---|---|---|---|---|---|---|
| Japan Commercial Property Price Index | Ministry of Land, Infrastructure, Transport and Tourism | Office, Retail, Logistics, Hotel and Land | Transaction price | All Japan | Quarterly | 2008 |
| Land Market Value Publication | Ministry of Land, Infrastructure, Transport and Tourism | Land for commercial, residential and industrial real estate | Appraisal value | All Japan | Annual | 1970 |
| Urban Land Price Index | Japan Real Estate Institute | Land for commercial, residential and industrial real estate | Appraisal value | 223 cities | Biannual | 1936 |
| ARES Japan Property Index | The Association For Real Estate Securitization | Office, Residential, Retail, Logistics, Hotel and others | Net income and capital value | J-REIT Funds + Unlisted Funds | Monthly | 2001 |
| IPD Japan Monthly Property Index | IPD: Investment Property Databank | Office, Residential, Retail, Logistics, Hotel and others | Net income and capital value | J-REIT Funds + Unlisted Funds | Monthly | 2001 |
| JREI Office Index (JOIX) | Japan Real Estate Institute | Office | Estimated net income and capital value | 13 major cities | Biannual | 2002 |
| MUTB-CBRE Real Estate Investment Index | Mitsubishi UFJ Trust and Banking Corporation & CB Richard Ellis | Office | Estimated net income and capital value | 13 major cities | Annual | 1970-2010 |
| Sumitomo Trust Property Index (STIX) | The Sumitomo Trust and Banking & STB Research Institute | Office | Estimated net income and capital value | Tokyo and Osaka | Annual | 1976-2008 |
| Farmland Value And Rent Survey | Japan Real Estate Institute | Farmland | Transaction price and rent (based on survey) | All Japan | Annual | 1913 |
| Timberland Value Survey | Japan Real Estate Institute | Timberland | Transaction price (based on survey) | All Japan | Annual | 1940 |

*Availability means that the data is available from this year.

# JAPAN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ARES Japan Property Index :Office
IPD Japan Monthly Property Index:Office
JOIX :Office

# OTHER COMMERCIAL PROPERTY INDICATORS: CONCLUSIONS

- Other indicators also important.
  - Commercial land prices (not often compiled, lack of data).
  - Office rents per m2.
  - Derived variables.
    - Net or Gross Debt as a percentage of Net Asset Value; Capital value-to-GDP ratio; capital value-to-private consumption ratio; capital value-to-employment ratio; capital value-to-rent ratio yield average.

Similar challenges.

# JAPAN

| Survey | Organisation | Use | Source | Coverage | Frequency | Availability* |
|---|---|---|---|---|---|---|
| National Office and Apartment Rent Index | Japan Real Estate Institute | Office and residential | Appraisal rental value | All Japan | Annual | 1995 |
| Retail Rent Trend | Japan Real Estate Institute and BAC Urban Projects | Retail | Asking rent | 9 major cities | Biannual | 2008 |
| The Japanese Real Estate Investor Survey | Japan Real Estate Institute | Office, Residential, Retail, Logistics and Hotel | Yield (based on survey) | Tokyo + 13 major cities | Biannual | 1999 |
| Assumed Achievable Rent | CBRE Japan | Office | Assumed achievable rent | Tokyo, Osaka and Nagoya | Quarterly | 2005 |
| Vacancy and Asking Rent | CBRE Japan | Office | Vacancy and asking rent | Tokyo + 14 major cities | Quarterly | 1996 |
| Vacancy and Asking Rent | CBRE Japan | Logistics | Vacancy and asking rent | 16 prefectures | Quarterly | 2001 |
| Rent Diffusion Index | Xymax Real Estate Institute | Office | Contract rent | Tokyo | Annual | 2000 |
| Implied Cap Rate | Sumitomo Mitsui Trust Research Institute | Office, Residential, Retail, Logistics, Hotel and others | Net income, market value of debt and equity | J-REIT market | Weekly | 2005 |

*Availability means that the data is available from this year.

# IPD (INVESTMENT PROPERTY DATABANK LTD)

- Most of IPD's CPPIs are based on valuations.
- Also compile *Property Fund Indices.*
  - Show *t*otal returns investors have received and can expect to receive from their unlisted fund investments.
  - Based on objective reports on fund returns computed on a like for like basis, i.e. following a pre-defined common set of objective rules or conventions, irrespective commercial pressure.
  - Complement supplementary indices compiled for analytical purposes relating to total return, income return and capital growth.

- Have been researching Transaction Linked Indices (TLIs).
  - Compare prices from transactions completed in the market place with previous valuations for those same assets.
  - Sale prices for properties that have sold in each period are regressed on to preceding valuations.
  - A set of dummy variables indicates location & property type.
  - Regression coefficients are used to conduct a mass appraisal of all unsold assets to compute predicted price.
  - Predicted prices in complimentary quarters gives a transaction linked and value-weighted estimate of capital growth.

Similar to the SPAR method used by Statistics Denmark.

# Thank you!

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