Production of Labour Input Indices and Labour Cost Indices

Labour Market Statistics: Harmonization and Analysis of Administrative Data Sources

22-24 October 2019
Putrajaya- Malaysia

Production of Labour Input and Labour Cost Indices

Labour Input Indices

- Aims to monitor the changes in labour input indicators,
- Monitor changes in the sectors in terms of periods and years,
- Provide national and international information requests

  - Employment Index
    - employees (paid workers) are taken into account.
    - Apprentices/trainees and actual employed business owners, partners and unpaid family workers are not included in employment indices.
  - Hours Worked Index
  - Gross Wages Salaries Index

Production of Labour Input and Labour Cost Indices

Labour Cost Indices

- Hourly Labour Cost Index
  - the cost incurred by the employer in relation to employment as earnings and labour cost excluding earnings
  - Does not include vocational training cost or other expenditures such as recruitment cost, spending on working clothes etc.
- Hourly Earnings Index
  - Includes gross basic wage and salary payments, regular payments in the form of wage, overtime payments, irregular payments and payments in kind.
- Hourly Labour Cost excluding Earnings Index
  - Includes the employer's part of statutory social security payments made to social security institutions, severance and termination payments.

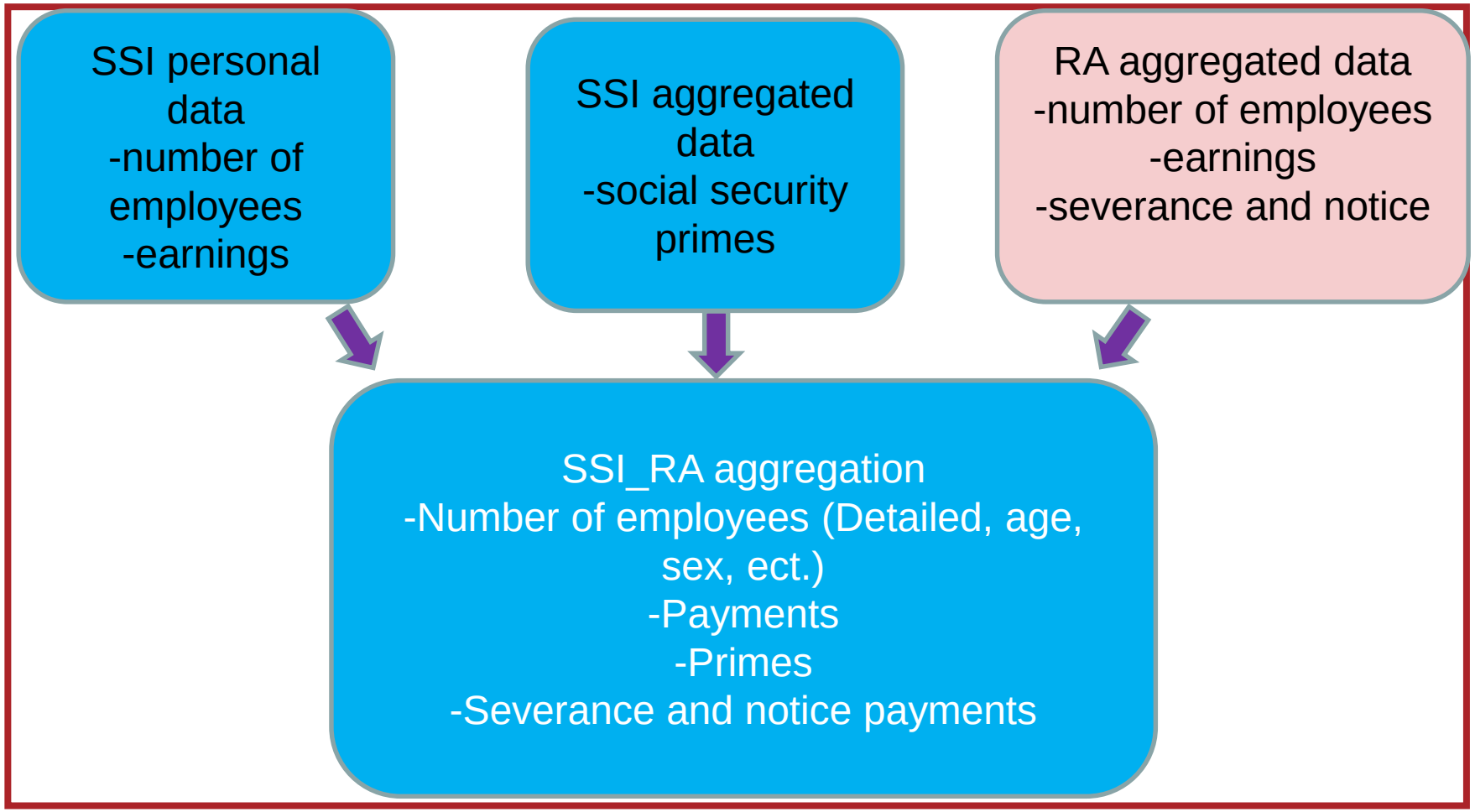
Production of Labour Input and Labour Cost Indices

- Administrative records related to business statistics; employment, revenues and expenses of the firms.

- Administrative data recources for LII in Turkey;

1. Social Security Institution (SSI)
2. Revenue Administration (RA)
3. Banking Regulation and Supervision Agency (BRSA)

Production of Labour Input and Labour Cost Indices



Production of Labour Input and Labour Cost Indices

Social Security Institution (SSI) administrative records

- Personal based SSI data integrated with business registers (BR) system.
  - SSI id number of the local unit is linked with RA tax id and BR enterprise id.
- Semi-summed SSI data at enterprise level produced
- This table is still not unique per employee
  - Contains different categorical variables so more than one raw for a unique employee.
- Summed SSI data produced
  - Unique for enterprise and gender (not for LII but for SES)
- Final SSI table
  - Unique for enterprise (tax id) having number of employees, earnings and social security primes

Production of Labour Input and Labour Cost Indices

Revenue Administration (RA) administrative records

- Enterprise (tax id) based RA data integrated with business registers (BR) system.
  - RA tax id linked with BR enterprise id.
- Summed RA data at enterprise level produced
- This table is final RA table, unique per tax id number
  - Unique for enterprise (tax id) having number of employees, earnings and severance and notice payments

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Banking Regulation and Supervising Agency (BRSA) administrative records

- Sector total data for
  - State owned banks
  - Private banks,
  - Investment banks,
  - Participation banks
  - Having number of employees, earnings and severance and notice payments

Production of Labour Input and Labour Cost Indices

Banking Regulation and Supervision Agency (BRSA) administrative records

- Detailed data for banking sector (Division 64 of NACE Rev.2)
- Include;
  - Total number of employees in the sector,
  - Wage payments
  - Severance and notice payments
- Banking sector used to have its own retirement shemes in TR which is now lose its size with new employees with SSI schemes.

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Labour Force Survey (LFS) data for hours worked

- Neither SSI nor RA data have hpurs worked data
- LFS hours worked data used for calculating hours worked index
  - Hours worked data of paid workers
  - In public and private sectors
- LFS collects data for the reference week
  - Weekly hours worked data converted to monthly data

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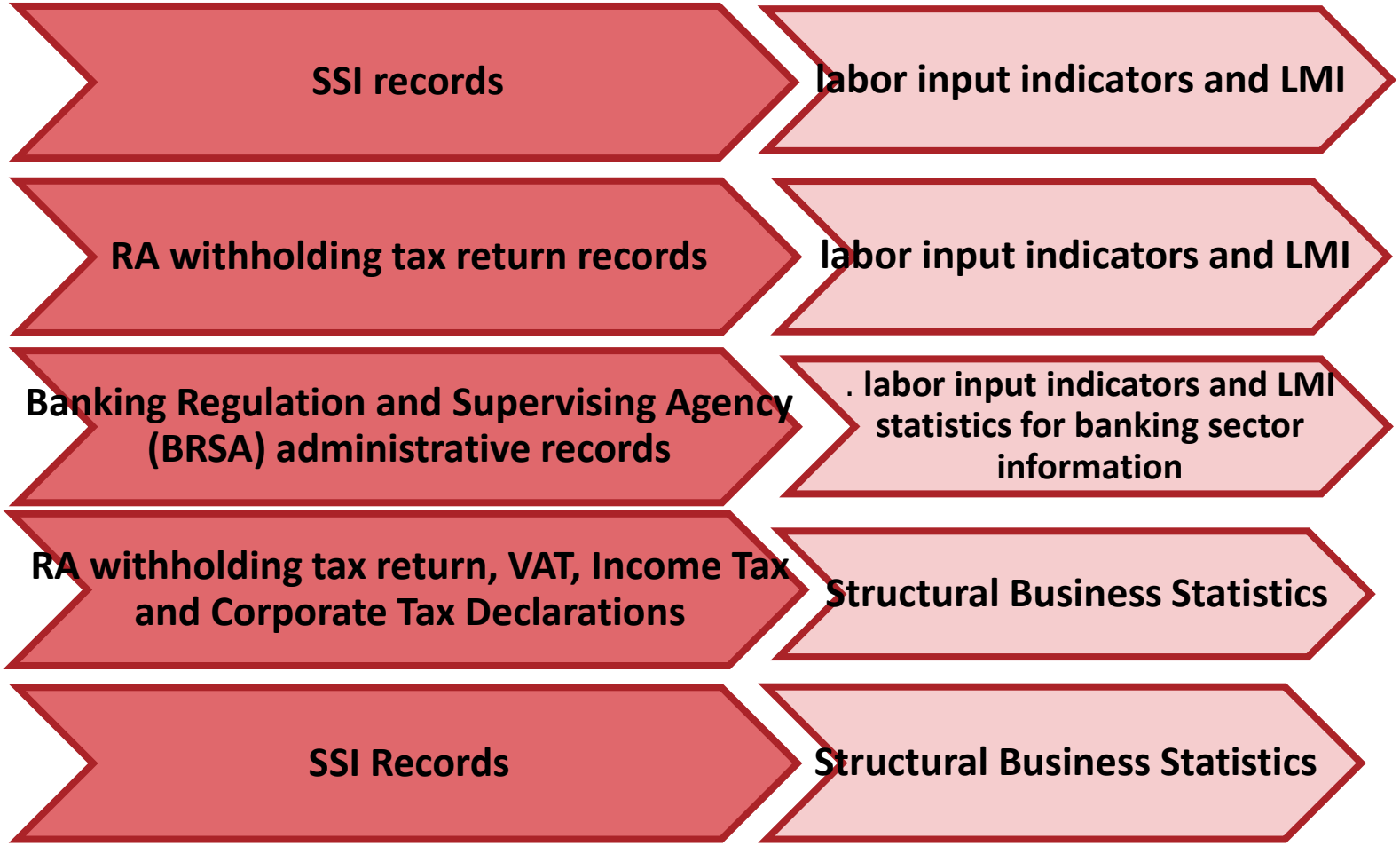

Production of Labour Input and Labour Cost Indices

- Single row for each individual from multiple rows in SSI data set
- Personal id numbers converted to unique statistical numbers (IST_NUM)
- Needed variables are calculated from admin data sources
- Aggregation for enterprises and linkage with RA data
- Linkage with Business Registers
- Selection for index calculation

Production of Labour Input and Labour Cost Indices

Covered NACE Rev.2 activities

B- Mining and quarrying
C- Manufacturing
D- Electricity, gas, steam and air-conditioning supply
E- Water supply, sewerage, waste management and remediation
F- Construction
G- Wholesale and retail trade, repair of motor vehicles and motorcycles
H- Transportaion and storage
I- Accomodation and food service activities
J- Information and communication
K- Financial and insurance
L- Real estate activities
M- Proffesional, scientific and tehcnical activities
N- Administrative and support service activities

Production of Labour Input and Labour Cost Indices

Periodicity

- Indices are published quarterly.

Reference Periods

- Quarter I (January, February, March)
- Quarter II (April, May, June)
- Quarter III (July, August, September)
- Quarter IV (October, November, December)

Production of Labour Input and Labour Cost Indices

Index type

- At each level, fixed base year simple index method is used which is calculated by multiplying the sum of the relevant levels by the base year average

Source of weights

- Weight is not used because of full enumeration

Imputation

- Incorrect or outlier data in administrative records are corrected by statistical methods

Production of Labour Input and Labour Cost Indices

Seasonal Adjustment

- The seasonal adjustment of Labor Input Indices is carried out using TRAMO-SEATS methodology
- The software that is used for the application is 2.2.0 version of JDemetra+
- Seasonal and calendar adjustment process begins at the end of each year with the identification of the models of next year
- Specified model structure is kept fixed throughout the year to adjust seasonally and/or calendar effects
- At the end of the year, specification of econometric estimation models for the following year is done.

Production of Labour Input and Labour Cost Indices

Seasonal Adjustment

- Seasonally and calendar adjusted figures of Labor Input Indices are produced by indirect approach
- Firstly the three digit NACE Rev2 classification individual subseries are seasonally adjusted
- Then these series are used to derive seasonally and calendar adjusted two digit subseries, sections, MIGS and sector totals
- Seasonal adjustment procedure is subject to revisions over time because of the re-estimation of seasonal component as new observations are added
- These revisions are implemented on the data of the last three years excluding the current year

Production of Labour Input and Labour Cost Indices

Seasonal Adjustment

- "Calendar adjusted" data is derived from unadjusted data by removing calendar and holiday originated effects
- Should be used in comparisons regarding the same quarter of the previous year
- "Seasonally adjusted" data is derived from unadjusted data by removing effects originating from seasonal effects
- Should be used in comparisons regarding the previous quarter
- "Seasonally and calendar adjusted" data is derived by removing both effects mentioned above
- Should be used in comparisons regarding the previous quarter


תודה
Dankie
Gracias
Спасибо
شكراً
Merci
Takk
Köszönjük
Terima kasih
Grazie
Dziękujemy
Dėkojame
Ďakujeme
Vielen Dank
Paldies
Kiitos
Täname teid
谢谢
Thank You
Tak
感謝您
Obrigado
Teşekkür Ederiz
감사합니다
Σας ευχαριστούμε
ขอบคุณ
Bedankt
Děkujeme vám
ありがとうございます
Tack