Package 'CHNCapitalStock'

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Title Compute Chinese Capital Stocks

Version 0.1.1

Description Compute Chinese capital stocks in provinces level, based on Zhang (2008) <DOI:10.1080/14765280802028302>.

License GPL-2

Encoding UTF-8

LazyData true

URL https://github.com/common2016/CapitalStock

RoxygenNote 7.2.3

Language en-US

Depends R (>= 2.10)

Imports dplyr

Suggests testthat

NeedsCompilation no

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Repository CRAN

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Contents

asset *Assets*

Description

A dataset containing investment, the indices of investment and the price indices of investment

Usage

```
asset
```

Format

An object of class `data.frame` with 2157 rows and 6 columns.

Details

@format A data frame:

prv provinces

yr year

invest total fixed capital formation

InvestIndex index of fixed capital formation

InvestPrice price index of investment in fixed assets

depr depreciation

CompK *Compute Capital Stock in Chinese Provinces*

Description

This function compute capital stock of provinces in China using the method by Zhang (2008) or Chen (2020).

Usage

```
CompK(
  prv,
  method = "ZJ",
  startyr = 1996,
  yr = NULL,
  invest = NULL,
  InvestPrice = NULL,
  depr = NULL,
  delta = 0.096,
  bt = 1952
)
```

Arguments

prv	a province name, a scalar character. It's Chinese phonetic alphabets.
method	a string. 'ZJ' by Zhang (2008) or 'CP' by Chen (2020).
startyr	a numeric scalar. When use the method by Chen (2020), delta is used before startyr, and after startyr depreciation in data asset is used. When use the method by Zhang (2008), the parameters is not useful.
yr	a numeric vector about years. If you only need capital stock before 2022, you can use its default NULL. If you need to compute capital stocks after 2022, you can set, for example, yr = c(2023,2024).
invest	a numeric vector about investment, its length equal the length of yr, and its units is 100 million in current price.
InvestPrice	a numeric vector about price indices of investment, its length equal the length of yr, and it is a fixed base index with equaling 1 in bt.
depr	a numeric vector about depreciation,its length equal the length of yr, and its units is 100 million in current price. If use the method 'ZJ', the parameter is not useful.
delta	a rate of depreciation, a scalar number.
bt	a scalar number, such as 2000. It means computing capital stock with its price equal 1 in bt

Value

The function return a data.frame, and its 1st column is province, 2nd column is year, 3rd column is capital stock, 4th column is the price index of investment.

Note

The parameter InvestPrice is a fixed base index with equaling 1 in 1952 by default. However, we often only get a price indices of investment with equaling 1 in last year. You can use data(asset) to get InvestPrice in any year (before 2017) with equaling 1 in 1952. So, it is easy then.

References

Zhang, J., Estimation of China's provincial capital stock (1952-2004) with applications. *Journal of Chinese Economic and Business Studies*, 2008. 6(2): p. 177-196.

Examples

```
# Compute capital stock in Xinjiang province in 1952-2017
CompK(prv = 'xinjiang')
# Compute capital stock in Xinjiang province in 1952-2017 with its price equaling 1 in 2000
CompK(prv = 'xinjiang', bt = 2000)
# compute capital stock in Beijing in 2023 and 2024
CompK(yr = 2023:2024, invest = c(10801.2,11100),
   InvestPrice = c(1.86*1.03,1.86*1.03*1.021),
   prv = 'beijing',delta = 0.096)
# ...
```

```
# beijing 2023 42043.06533   1.9158000
# beijing 2024 43681.68543   1.9560318
# Compute capital stock in chongqing with its price equaling 1 in 1992 based on
# Chen and Wan (2020)
CompK(prv = 'chongqing', method = 'CP', startyr = 1996, bt = 1992)
```

CompK_CP *Compute Capital Stock in Chinese Provinces*

Description

This function compute capital stock of provinces in China using the method by Chen (2020).

Usage

```
CompK_CP(
  prv,
  startyr = 1993,
  yr = NULL,
  invest = NULL,
  InvestPrice = NULL,
  depr = NULL,
  delta = 0.096,
  bt = 1992
)
```

Arguments

prv	a province name, a scalar character. It's Chinese phonetic alphabets.
startyr	a numeric scalar. When use the method by Chen (2020), delta is used before startyr, and after startyr depreciation in data asset is used.
yr	a numeric vector about years. If you only need capital stock before 2017, you can use its default NULL. If you need to compute capital stocks in other years (for example 2018,2019), you can set, for example, yr = c(2018,2019).
invest	a numeric vector about investment, its length equal the length of yr, and its units is 100 million in current price.
InvestPrice	a numeric vector about price indices of investment, its length equal the length of yr, and it is a fixed base index with equaling 1 in bt.
depr	a numeric vector about depreciation,its length equal the length of yr, and its units is 100 million in current price.
delta	a rate of depreciation, a scalar number.
bt	a scalar number, such as 2000. It means computing capital stock with its price equal 1 in bt

Value

The function return a data.frame, and its 1st column is province, 2nd column is year, 3rd column is capital stock, 4th column is the price index of investment.

Note

The parameter `InvestPrice` is a fixed base index with equaling 1 in 1952 by default. However, we often only get a price indices of investment with equaling 1 in last year. You can use `data(asset)` to get `InvestPrice` in any year (before 2017) with equaling 1 in 1952. So, it is easy then.

References

Chen, Pu, 2020, Compute capital stocks of provinces in China (In Chinese).

CompK_ZJ *Compute Capital Stock in Chinese Provinces*

Description

This function compute capital stock of provinces in China using the method by Zhang (2008).

Usage

```
CompK_ZJ(
  yr = NULL,
  invest = NULL,
  InvestPrice = NULL,
  delta = 0.096,
  prv,
  bt = 1952
)
```

Arguments

`yr`	a numeric vector about years. If you only need capital stock before 2017, you can use its default `NULL`. If you need to compute capital stocks in other years (for example 2018,2019), you can set, for example, `yr = c(2018,2019)`.
`invest`	a numeric vector about investment, its length equal the length of `yr`, and its units is 100 million in current price.
`InvestPrice`	a numeric vector about price indices of investment, its length equal the length of `yr`, and it is a fixed base index with equaling 1 in `bt`.
`delta`	a rate of depreciation, a scalar number.
`prv`	a province name, a scalar character. It's Chinese phonetic alphabets.
`bt`	a scalar number, such as 2000. It means computing capital stock with its price equal 1 in `bt`

Value

The function return a data.frame, and its 1st column is province, 2nd column is year, 3rd column is capital stock, 4th column is the price index of investment.

Note

The parameter `InvestPrice` is a fixed base index with equaling 1 in 1952 by default. However, we often only get a price indices of investment with equaling 1 in last year. You can use `data(asset)` to get `InvestPrice` in any year (before 2017) with equaling 1 in 1952. So, it is easy then.

References

Zhang, J., Estimation of China's provincial capital stock (1952-2004) with applications. *Journal of Chinese Economic and Business Studies*, 2008. 6(2): p. 177-196.

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