china

February 17, 2021

[1]:
```
!pip install wbdata

import pandas as pd
import wbdata
import numpy as np
import re
import seaborn as sns
import matplotlib.pyplot as plt
from matplotlib import animation as ani
import matplotlib.patches as mpatches
```

```
Requirement already satisfied: wbdata in /opt/conda/lib/python3.8/site-packages
(0.3.0)
Requirement already satisfied: decorator>=4.0 in /opt/conda/lib/python3.8/site-
packages (from wbdata) (4.4.2)
Requirement already satisfied: appdirs<2.0,>=1.4 in
/opt/conda/lib/python3.8/site-packages (from wbdata) (1.4.4)
Requirement already satisfied: tabulate>=0.8.5 in /opt/conda/lib/python3.8/site-
packages (from wbdata) (0.8.7)
Requirement already satisfied: requests>=2.0 in /opt/conda/lib/python3.8/site-
packages (from wbdata) (2.25.1)
Requirement already satisfied: chardet<5,>=3.0.2 in
/opt/conda/lib/python3.8/site-packages (from requests>=2.0->wbdata) (3.0.4)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in
/opt/conda/lib/python3.8/site-packages (from requests>=2.0->wbdata) (1.25.7)
Requirement already satisfied: idna<3,>=2.5 in /opt/conda/lib/python3.8/site-
packages (from requests>=2.0->wbdata) (2.8)
Requirement already satisfied: certifi>=2017.4.17 in
/opt/conda/lib/python3.8/site-packages (from requests>=2.0->wbdata) (2019.11.28)
```

[2]:
```
wbdata.get_source()
```

[2]:

id	name
1	Doing Business
2	World Development Indicators
3	Worldwide Governance Indicators
5	Subnational Malnutrition Database

6 International Debt Statistics
11 Africa Development Indicators
12 Education Statistics
13 Enterprise Surveys
14 Gender Statistics
15 Global Economic Monitor
16 Health Nutrition and Population Statistics
18 IDA Results Measurement System
19 Millennium Development Goals
20 Quarterly Public Sector Debt
22 Quarterly External Debt Statistics SDDS
23 Quarterly External Debt Statistics GDDS
24 Poverty and Equity
25 Jobs
27 Global Economic Prospects
28 Global Financial Inclusion
29 The Atlas of Social Protection: Indicators of Resilience and Equity
30 Exporter Dynamics Database - Indicators at Country-Year Level
31 Country Policy and Institutional Assessment
32 Global Financial Development
33 G20 Financial Inclusion Indicators
34 Global Partnership for Education
35 Sustainable Energy for All
36 Statistical Capacity Indicators
37 LAC Equity Lab
38 Subnational Poverty
39 Health Nutrition and Population Statistics by Wealth Quintile
40 Population estimates and projections
41 Country Partnership Strategy for India (FY2013 - 17)
43 Adjusted Net Savings
44 Readiness for Investment in Sustainable Energy
45 Indonesia Database for Policy and Economic Research
46 Sustainable Development Goals
50 Subnational Population
54 Joint External Debt Hub
57 WDI Database Archives
58 Universal Health Coverage
59 Wealth Accounts
60 Economic Fitness
61 PPPs Regulatory Quality
62 International Comparison Program (ICP) 2011
63 Human Capital Index
64 Worldwide Bureaucracy Indicators
65 Health Equity and Financial Protection Indicators
66 Logistics Performance Index
67 PEFA 2011
68 PEFA 2016

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 69  Global Financial Inclusion and Consumer Protection Survey
 70  Economic Fitness 2
 71  International Comparison Program (ICP) 2005
 72  PEFA_Test
 73  Global Financial Inclusion and Consumer Protection Survey (Internal)
 75  Environment, Social and Governance (ESG) Data
 76  Remittance Prices Worldwide (Sending Countries)
 77  Remittance Prices Worldwide (Receiving Countries)
 78  ICP 2017
 79  PEFA_GRPFM
 80  Gender Disaggregated Labor Database (GDLD)
 81  International Debt Statistics: DSSI
```

[3]:
```
SOURCE=16
indicators = wbdata.get_indicator(source=SOURCE)
indicators
```

[3]:
```
id                   name
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-----------------------------------------------------------------------
HD.HCI.OVRL          Human Capital Index (HCI) (scale 0-1)
HD.HCI.OVRL.FE       Human Capital Index (HCI), Female (scale 0-1)
HD.HCI.OVRL.LB       Human Capital Index (HCI), Lower Bound (scale 0-1)
HD.HCI.OVRL.LB.FE    Human Capital Index (HCI), Female, Lower Bound (scale 0-1)
HD.HCI.OVRL.LB.MA    Human Capital Index (HCI), Male, Lower Bound (scale 0-1)
HD.HCI.OVRL.MA       Human Capital Index (HCI), Male (scale 0-1)
HD.HCI.OVRL.UB       Human Capital Index (HCI), Upper Bound (scale 0-1)
HD.HCI.OVRL.UB.FE    Human Capital Index (HCI), Female, Upper Bound (scale 0-1)
HD.HCI.OVRL.UB.MA    Human Capital Index (HCI), Male, Upper Bound (scale 0-1)
NY.GNP.PCAP.CD       GNI per capita, Atlas method (current US$)
SE.ADT.1524.LT.FM.ZS Literacy rate, youth (ages 15-24), gender parity index
(GPI)
SE.ADT.1524.LT.MA.ZS Literacy rate, youth male (% of males ages 15-24)
SE.ADT.1524.LT.ZS    Literacy rate, youth total (% of people ages 15-24)
SE.ADT.LITR.FE.ZS    Literacy rate, adult female (% of females ages 15 and
above)
SE.ADT.LITR.MA.ZS    Literacy rate, adult male (% of males ages 15 and above)
SE.ADT.LITR.ZS       Literacy rate, adult total (% of people ages 15 and above)
SE.ENR.ORPH          Ratio of school attendance of orphans to school attendance
of non-orphans ages 10-14
SE.PRM.CMPT.FE.ZS    Primary completion rate, female (% of relevant age group)
SE.PRM.CMPT.MA.ZS    Primary completion rate, male (% of relevant age group)
SE.PRM.CMPT.ZS       Primary completion rate, total (% of relevant age group)
SE.PRM.ENRR          School enrollment, primary (% gross)
SE.PRM.ENRR.FE       School enrollment, primary, female (% gross)
SE.PRM.ENRR.MA       School enrollment, primary, male (% gross)
SE.PRM.NENR          School enrollment, primary (% net)
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SE.PRM.NENR.FE School enrollment, primary, female (% net)
SE.PRM.NENR.MA School enrollment, primary, male (% net)
SE.SEC.ENRR School enrollment, secondary (% gross)
SE.SEC.ENRR.FE School enrollment, secondary, female (% gross)
SE.SEC.ENRR.MA School enrollment, secondary, male (% gross)
SE.SEC.NENR School enrollment, secondary (% net)
SE.SEC.NENR.FE School enrollment, secondary, female (% net)
SE.SEC.NENR.MA School enrollment, secondary, male (% net)
SE.TER.ENRR School enrollment, tertiary (% gross)
SE.TER.ENRR.FE School enrollment, tertiary, female (% gross)
SE.XPD.TOTL.GD.ZS Government expenditure on education, total (% of GDP)
SH.ALC.PCAP.FE.LI Total alcohol consumption per capita, female (liters of pure alcohol, projected estimates, female 15+ years of age)
SH.ALC.PCAP.LI Total alcohol consumption per capita (liters of pure alcohol, projected estimates, 15+ years of age)
SH.ALC.PCAP.MA.LI Total alcohol consumption per capita, male (liters of pure alcohol, projected estimates, male 15+ years of age)
SH.ANM.ALLW.ZS Prevalence of anemia among women of reproductive age (% of women ages 15-49)
SH.ANM.CHLD.ZS Prevalence of anemia among children (% of children under 5)
SH.ANM.NPRG.ZS Prevalence of anemia among non-pregnant women (% of women ages 15-49)
SH.CON.1524.FE.ZS Condom use, population ages 15-24, female (% of females ages 15-24)
SH.CON.1524.MA.ZS Condom use, population ages 15-24, male (% of males ages 15-24)
SH.CON.AIDS.FE.ZS Condom use with non regular partner, % adults(15-49), female
SH.CON.AIDS.MA.ZS Condom use with non regular partner, % adults(15-49), male
SH.DTH.0509 Number of deaths ages 5-9 years
SH.DTH.1014 Number of deaths ages 10-14 years
SH.DTH.1519 Number of deaths ages 15-19 years
SH.DTH.2024 Number of deaths ages 20-24 years
SH.DTH.COMM.ZS Cause of death, by communicable diseases and maternal, prenatal and nutrition conditions (% of total)
SH.DTH.IMRT Number of infant deaths
SH.DTH.IMRT.FE Number of infant deaths, female
SH.DTH.IMRT.MA Number of infant deaths, male
SH.DTH.INJR.ZS Cause of death, by injury (% of total)
SH.DTH.MORT Number of under-five deaths
SH.DTH.MORT.FE Number of under-five deaths, female
SH.DTH.MORT.MA Number of under-five deaths, male
SH.DTH.NCOM.ZS Cause of death, by non-communicable diseases (% of total)
SH.DTH.NMRT Number of neonatal deaths
SH.DTH.STLB Number of stillbirths
SH.DYN.0509 Probability of dying among children ages 5-9 years (per

```
1,000)
SH.DYN.1014           Probability of dying among adolescents ages 10-14 years
(per 1,000)
SH.DYN.1519           Probability of dying among adolescents ages 15-19 years
(per 1,000)
SH.DYN.2024           Probability of dying among youth ages 20-24 years (per
1,000)
SH.DYN.AIDS           Adults (ages 15+) living with HIV
SH.DYN.AIDS.DH        AIDS estimated deaths (UNAIDS estimates)
SH.DYN.AIDS.FE.ZS     Women's share of population ages 15+ living with HIV (%)
SH.DYN.AIDS.ZS        Prevalence of HIV, total (% of population ages 15-49)
SH.DYN.MORT           Mortality rate, under-5 (per 1,000 live births)
SH.DYN.MORT.FE        Mortality rate, under-5, female (per 1,000 live births)
SH.DYN.MORT.MA        Mortality rate, under-5, male (per 1,000 live births)
SH.DYN.NCOM.FE.ZS     Mortality from CVD, cancer, diabetes or CRD between exact
ages 30 and 70, female (%)
SH.DYN.NCOM.MA.ZS     Mortality from CVD, cancer, diabetes or CRD between exact
ages 30 and 70, male (%)
SH.DYN.NCOM.ZS        Mortality from CVD, cancer, diabetes or CRD between exact
ages 30 and 70 (%)
SH.DYN.NMRT           Mortality rate, neonatal (per 1,000 live births)
SH.DYN.STLB           Stillbirth rate (per 1,000 total births)
SH.FPL.SATI.ZS        Demand for family planning satisfied by any methods (% of
married women with demand for family planning)
SH.FPL.SATM.ZS        Demand for family planning satisfied by modern methods (%
of married women with demand for family planning)
SH.H2O.BASW.RU.ZS     People using at least basic drinking water services, rural
(% of rural population)
SH.H2O.BASW.UR.ZS     People using at least basic drinking water services, urban
(% of urban population)
SH.H2O.BASW.ZS        People using at least basic drinking water services (% of
population)
SH.H2O.SMDW.RU.ZS     People using safely managed drinking water services, rural
(% of rural population)
SH.H2O.SMDW.UR.ZS     People using safely managed drinking water services, urban
(% of urban population)
SH.H2O.SMDW.ZS        People using safely managed drinking water services (% of
population)
SH.HIV.0014           Children (0-14) living with HIV
SH.HIV.1524.FE.ZS     Prevalence of HIV, female (% ages 15-24)
SH.HIV.1524.KW.FE.ZS  Comprehensive correct knowledge of HIV/AIDS, ages 15-24,
female (2 prevent ways and reject 3 misconceptions)
SH.HIV.1524.KW.MA.ZS  Comprehensive correct knowledge of HIV/AIDS, ages 15-24,
male (2 prevent ways and reject 3 misconceptions)
SH.HIV.1524.MA.ZS     Prevalence of HIV, male (% ages 15-24)
SH.HIV.ARTC.ZS        Antiretroviral therapy coverage (% of people living with
HIV)
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SH.HIV.INCD Adults (ages 15-49) newly infected with HIV
SH.HIV.INCD.14 Children (ages 0-14) newly infected with HIV
SH.HIV.INCD.50.P3 Incidence of HIV, ages 50+ (per 1,000 uninfected population ages 50+)
SH.HIV.INCD.TL Adults (ages 15+) and children (ages 0-14) newly infected with HIV
SH.HIV.INCD.TL.P3 Incidence of HIV, all (per 1,000 uninfected population)
SH.HIV.INCD.YG Young people (15-24) newly infected with HIV
SH.HIV.INCD.YG.P3 Incidence of HIV, ages 15-24 (per 1,000 uninfected population ages 15-24)
SH.HIV.INCD.ZS Incidence of HIV, ages 15-49 (per 1,000 uninfected population ages 15-49)
SH.HIV.KNOW.FE.ZS % of females having comprehensive correct knowledge about HIV (2 prevent ways and reject 3 misconceptions)
SH.HIV.KNOW.MA.ZS Comprehensive correct knowledge of HIV/AIDS, ages 15-49, male (2 prevent ways and reject 3 misconceptions)
SH.HIV.ORPH Children orphaned by HIV/AIDS
SH.HIV.PMTC.ZS Antiretroviral therapy coverage for PMTCT (% of pregnant women living with HIV)
SH.HIV.TOTL Adults (ages 15+) and children (0-14 years) living with HIV
SH.IMM.HEPB Immunization, HepB3 (% of one-year-old children)
SH.IMM.HIB3 Immunization, Hib3 (% of children ages 12-23 months)
SH.IMM.IBCG Immunization, BCG (% of one-year-old children)
SH.IMM.IDPT Immunization, DPT (% of children ages 12-23 months)
SH.IMM.MEA2 Immunization, measles second dose (% of children by the nationally recommended age)
SH.IMM.MEAS Immunization, measles (% of children ages 12-23 months)
SH.IMM.POL3 Immunization, Pol3 (% of one-year-old children)
SH.MED.BEDS.ZS Hospital beds (per 1,000 people)
SH.MED.CMHW.P3 Community health workers (per 1,000 people)
SH.MED.NUMW.P3 Nurses and midwives (per 1,000 people)
SH.MED.PHYS.ZS Physicians (per 1,000 people)
SH.MED.SAOP.P5 Specialist surgical workforce (per 100,000 population)
SH.MLR.INCD.P3 Incidence of malaria (per 1,000 population at risk)
SH.MLR.IPTP.ZS Intermittent preventive treatment (IPT) of malaria in pregnancy (% of pregnant women)
SH.MLR.NETS.ZS Use of insecticide-treated bed nets (% of under-5 population)
SH.MLR.TRET.ZS Children with fever receiving antimalarial drugs (% of children under age 5 with fever)
SH.MMR.DTHS Number of maternal deaths
SH.MMR.LEVE Length of paid maternity leave (days)
SH.MMR.RISK Lifetime risk of maternal death (1 in: rate varies by country)
SH.MMR.RISK.ZS Lifetime risk of maternal death (%)
SH.MMR.WAGE.ZS Maternal leave benefits (% of wages paid in covered

period)
SH.PRG.ANEM Prevalence of anemia among pregnant women (%)
SH.PRG.SYPH.ZS Prevalence of syphilis (% of women attending antenatal care)
SH.PRV.SMOK Prevalence of current tobacco use (% of adults)
SH.PRV.SMOK.FE Prevalence of current tobacco use, females (% of female adults)
SH.PRV.SMOK.MA Prevalence of current tobacco use, males (% of male adults)
SH.SGR.CRSK.ZS Risk of catastrophic expenditure for surgical care (% of people at risk)
SH.SGR.IRSK.ZS Risk of impoverishing expenditure for surgical care (% of people at risk)
SH.SGR.PROC.P5 Number of surgical procedures (per 100,000 population)
SH.STA.AIRP.FE.P5 Mortality rate attributed to household and ambient air pollution, age-standardized, female (per 100,000 female population)
SH.STA.AIRP.MA.P5 Mortality rate attributed to household and ambient air pollution, age-standardized, male (per 100,000 male population)
SH.STA.AIRP.P5 Mortality rate attributed to household and ambient air pollution, age-standardized (per 100,000 population)
SH.STA.ANV4.ZS Pregnant women receiving prenatal care of at least four visits (% of pregnant women)
SH.STA.ANVC.ZS Pregnant women receiving prenatal care (%)
SH.STA.ARIC.ZS ARI treatment (% of children under 5 taken to a health provider)
SH.STA.BASS.RU.ZS People using at least basic sanitation services, rural (% of rural population)
SH.STA.BASS.UR.ZS People using at least basic sanitation services, urban (% of urban population)
SH.STA.BASS.ZS People using at least basic sanitation services (% of population)
SH.STA.BFED.ZS Exclusive breastfeeding (% of children under 6 months)
SH.STA.BRTC.ZS Births attended by skilled health staff (% of total)
SH.STA.BRTW.ZS Low-birthweight babies (% of births)
SH.STA.DIAB.ZS Diabetes prevalence (% of population ages 20 to 79)
SH.STA.HYGN.RU.ZS People with basic handwashing facilities including soap and water, rural (% of rural population)
SH.STA.HYGN.UR.ZS People with basic handwashing facilities including soap and water, urban (% of urban population)
SH.STA.HYGN.ZS People with basic handwashing facilities including soap and water (% of population)
SH.STA.IYCF.ZS Infant and young child feeding practices, all 3 IYCF (% children ages 6-23 months)
SH.STA.MALN.FE.ZS Prevalence of underweight, weight for age, female (% of children under 5)
SH.STA.MALN.MA.ZS Prevalence of underweight, weight for age, male (% of children under 5)

SH.STA.MALN.ZS Prevalence of underweight, weight for age (% of children under 5)
SH.STA.MALR Malaria cases reported
SH.STA.MMRT Maternal mortality ratio (modeled estimate, per 100,000 live births)
SH.STA.MMRT.NE Maternal mortality ratio (national estimate, per 100,000 live births)
SH.STA.ODFC.RU.ZS People practicing open defecation, rural (% of rural population)
SH.STA.ODFC.UR.ZS People practicing open defecation, urban (% of urban population)
SH.STA.ODFC.ZS People practicing open defecation (% of population)
SH.STA.ORCF.ZS Diarrhea treatment (% of children under 5 receiving oral rehydration and continued feeding)
SH.STA.ORTH Diarrhea treatment (% of children under 5 who received ORS packet)
SH.STA.OWAD.FE.ZS Prevalence of overweight, female (% of female adults)
SH.STA.OWAD.MA.ZS Prevalence of overweight, male (% of male adults)
SH.STA.OWAD.ZS Prevalence of overweight (% of adults)
SH.STA.OWGH.FE.ZS Prevalence of overweight, weight for height, female (% of children under 5)
SH.STA.OWGH.MA.ZS Prevalence of overweight, weight for height, male (% of children under 5)
SH.STA.OWGH.ZS Prevalence of overweight, weight for height (% of children under 5)
SH.STA.PNVC.ZS Postnatal care coverage (% mothers)
SH.STA.POIS.P5 Mortality rate attributed to unintentional poisoning (per 100,000 population)
SH.STA.POIS.P5.FE Mortality rate attributed to unintentional poisoning, female (per 100,000 female population)
SH.STA.POIS.P5.MA Mortality rate attributed to unintentional poisoning, male (per 100,000 male population)
SH.STA.SMSS.RU.ZS People using safely managed sanitation services, rural (% of rural population)
SH.STA.SMSS.UR.ZS People using safely managed sanitation services, urban (% of urban population)
SH.STA.SMSS.ZS People using safely managed sanitation services (% of population)
SH.STA.STNT.FE.ZS Prevalence of stunting, height for age, female (% of children under 5)
SH.STA.STNT.MA.ZS Prevalence of stunting, height for age, male (% of children under 5)
SH.STA.STNT.ZS Prevalence of stunting, height for age (% of children under 5)
SH.STA.SUIC.FE.P5 Suicide mortality rate, female (per 100,000 female population)
SH.STA.SUIC.MA.P5 Suicide mortality rate, male (per 100,000 male population)

SH.STA.SUIC.P5 Suicide mortality rate (per 100,000 population)
SH.STA.TRAF.P5 Mortality caused by road traffic injury (per 100,000 people)
SH.STA.WASH.P5 Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (per 100,000 population)
SH.STA.WAST.FE.ZS Prevalence of wasting, weight for height, female (% of children under 5)
SH.STA.WAST.MA.ZS Prevalence of wasting, weight for height, male (% of children under 5)
SH.STA.WAST.ZS Prevalence of wasting, weight for height (% of children under 5)
SH.SVR.WAST.FE.ZS Prevalence of severe wasting, weight for height, female (% of children under 5)
SH.SVR.WAST.MA.ZS Prevalence of severe wasting, weight for height, male (% of children under 5)
SH.SVR.WAST.ZS Prevalence of severe wasting, weight for height (% of children under 5)
SH.TBS.CURE.ZS Tuberculosis treatment success rate (% of new cases)
SH.TBS.DTEC.ZS Tuberculosis case detection rate (%, all forms)
SH.TBS.INCD Incidence of tuberculosis (per 100,000 people)
SH.TBS.MORT Tuberculosis death rate (per 100,000 people)
SH.UHC.NOP1.CG Increase in poverty gap at $1.90 ($ 2011 PPP) poverty line due to out-of-pocket health care expenditure (USD)
SH.UHC.NOP1.TO Number of people pushed below the $1.90 ($ 2011 PPP) poverty line by out-of-pocket health care expenditure
SH.UHC.NOP1.ZG Increase in poverty gap at $1.90 ($ 2011 PPP) poverty line due to out-of-pocket health care expenditure (% of poverty line)
SH.UHC.NOP1.ZS Proportion of population pushed below the $1.90 ($ 2011 PPP) poverty line by out-of-pocket health care expenditure (%)
SH.UHC.NOP2.CG Increase in poverty gap at $3.20 ($ 2011 PPP) poverty line due to out-of-pocket health care expenditure (USD)
SH.UHC.NOP2.TO Number of people pushed below the $3.20 ($ 2011 PPP) poverty line by out-of-pocket health care expenditure
SH.UHC.NOP2.ZG Increase in poverty gap at $3.20 ($ 2011 PPP) poverty line due to out-of-pocket health care expenditure (% of poverty line)
SH.UHC.NOP2.ZS Proportion of population pushed below the $3.20 ($ 2011 PPP) poverty line by out-of-pocket health care expenditure (%)
SH.UHC.OOPC.10.TO Number of people spending more than 10% of household consumption or income on out-of-pocket health care expenditure
SH.UHC.OOPC.10.ZS Proportion of population spending more than 10% of household consumption or income on out-of-pocket health care expenditure (%)
SH.UHC.OOPC.25.TO Number of people spending more than 25% of household consumption or income on out-of-pocket health care expenditure
SH.UHC.OOPC.25.ZS Proportion of population spending more than 25% of household consumption or income on out-of-pocket health care expenditure (%)
SH.UHC.SRVS.CV.XD UHC service coverage index
SH.VAC.TTNS.ZS Newborns protected against tetanus (%)

SH.XPD.CHEX.GD.ZS Current health expenditure (% of GDP)
SH.XPD.CHEX.PC.CD Current health expenditure per capita (current US$)
SH.XPD.CHEX.PP.CD Current health expenditure per capita, PPP (current international $)
SH.XPD.EHEX.CH.ZS External health expenditure (% of current health expenditure)
SH.XPD.EHEX.EH.ZS External health expenditure channeled through government (% of external health expenditure)
SH.XPD.EHEX.PC.CD External health expenditure per capita (current US$)
SH.XPD.EHEX.PP.CD External health expenditure per capita, PPP (current international $)
SH.XPD.GHED.CH.ZS Domestic general government health expenditure (% of current health expenditure)
SH.XPD.GHED.GD.ZS Domestic general government health expenditure (% of GDP)
SH.XPD.GHED.GE.ZS Domestic general government health expenditure (% of general government expenditure)
SH.XPD.GHED.PC.CD Domestic general government health expenditure per capita (current US$)
SH.XPD.GHED.PP.CD Domestic general government health expenditure per capita, PPP (current international $)
SH.XPD.KHEX.GD.ZS Capital health expenditure (% of GDP)
SH.XPD.OOPC.CH.ZS Out-of-pocket expenditure (% of current health expenditure)
SH.XPD.OOPC.PC.CD Out-of-pocket expenditure per capita (current US$)
SH.XPD.OOPC.PP.CD Out-of-pocket expenditure per capita, PPP (current international $)
SH.XPD.PVTD.CH.ZS Domestic private health expenditure (% of current health expenditure)
SH.XPD.PVTD.PC.CD Domestic private health expenditure per capita (current US$)
SH.XPD.PVTD.PP.CD Domestic private health expenditure per capita, PPP (current international $)
SI.POV.NAHC Poverty headcount ratio at national poverty lines (% of population)
SI.POV.RUHC Rural poverty headcount ratio at national poverty lines (% of rural population)
SI.POV.URHC Urban poverty headcount ratio at national poverty lines (% of urban population)
SL.EMP.INSV.FE.ZS Share of women in wage employment in the nonagricultural sector (% of total nonagricultural employment)
SL.TLF.TOTL.FE.ZS Labor force, female (% of total labor force)
SL.TLF.TOTL.IN Labor force, total
SL.UEM.TOTL.FE.ZS Unemployment, female (% of female labor force) (modeled ILO estimate)
SL.UEM.TOTL.MA.ZS Unemployment, male (% of male labor force) (modeled ILO estimate)
SL.UEM.TOTL.ZS Unemployment, total (% of total labor force) (modeled ILO

estimate)
SM.POP.NETM Net migration
SN.ITK.DEFC Number of people who are undernourished
SN.ITK.DEFC.ZS Prevalence of undernourishment (% of population)
SN.ITK.SALT.ZS Consumption of iodized salt (% of households)
SN.ITK.VITA.ZS Vitamin A supplementation coverage rate (% of children ages 6-59 months)
SP.ADO.TFRT Adolescent fertility rate (births per 1,000 women ages 15-19)
SP.DYN.AMRT.FE Mortality rate, adult, female (per 1,000 female adults)
SP.DYN.AMRT.MA Mortality rate, adult, male (per 1,000 male adults)
SP.DYN.CBRT.IN Birth rate, crude (per 1,000 people)
SP.DYN.CDRT.IN Death rate, crude (per 1,000 people)
SP.DYN.CONM.ZS Contraceptive prevalence, modern methods (% of women ages 15-49)
SP.DYN.CONU.ZS Contraceptive prevalence, any methods (% of women ages 15-49)
SP.DYN.IMRT.FE.IN Mortality rate, infant, female (per 1,000 live births)
SP.DYN.IMRT.IN Mortality rate, infant (per 1,000 live births)
SP.DYN.IMRT.MA.IN Mortality rate, infant, male (per 1,000 live births)
SP.DYN.LE00.FE.IN Life expectancy at birth, female (years)
SP.DYN.LE00.IN Life expectancy at birth, total (years)
SP.DYN.LE00.MA.IN Life expectancy at birth, male (years)
SP.DYN.SMAM.FE Age at first marriage, female
SP.DYN.SMAM.MA Age at first marriage, male
SP.DYN.TFRT.IN Fertility rate, total (births per woman)
SP.DYN.TO65.FE.ZS Survival to age 65, female (% of cohort)
SP.DYN.TO65.MA.ZS Survival to age 65, male (% of cohort)
SP.DYN.WFRT Wanted fertility rate (births per woman)
SP.HOU.FEMA.ZS Female headed households (% of households with a female head)
SP.M15.2024.FE.ZS Women who were first married by age 15 (% of women ages 20-24)
SP.M18.2024.FE.ZS Women who were first married by age 18 (% of women ages 20-24)
SP.MTR.1519.ZS Teenage mothers (% of women ages 15-19 who have had children or are currently pregnant)
SP.POP.0004.FE Population ages 00-04, female
SP.POP.0004.FE.5Y Population ages 00-04, female (% of female population)
SP.POP.0004.MA Population ages 00-04, male
SP.POP.0004.MA.5Y Population ages 00-04, male (% of male population)
SP.POP.0014.FE.IN Population ages 0-14, female
SP.POP.0014.FE.ZS Population ages 0-14, female (% of female population)
SP.POP.0014.MA.IN Population ages 0-14, male
SP.POP.0014.MA.ZS Population ages 0-14, male (% of male population)
SP.POP.0014.TO Population ages 0-14, total
SP.POP.0014.TO.ZS Population ages 0-14 (% of total population)

SP.POP.0509.FE	Population ages 05-09, female
SP.POP.0509.FE.5Y	Population ages 05-09, female (% of female population)
SP.POP.0509.MA	Population ages 05-09, male
SP.POP.0509.MA.5Y	Population ages 05-09, male (% of male population)
SP.POP.1014.FE	Population ages 10-14, female
SP.POP.1014.FE.5Y	Population ages 10-14, female (% of female population)
SP.POP.1014.MA	Population ages 10-14, male
SP.POP.1014.MA.5Y	Population ages 10-14, male (% of male population)
SP.POP.1519.FE	Population ages 15-19, female
SP.POP.1519.FE.5Y	Population ages 15-19, female (% of female population)
SP.POP.1519.MA	Population ages 15-19, male
SP.POP.1519.MA.5Y	Population ages 15-19, male (% of male population)
SP.POP.1564.FE.IN	Population ages 15-64, female
SP.POP.1564.FE.ZS	Population ages 15-64, female (% of female population)
SP.POP.1564.MA.IN	Population ages 15-64, male
SP.POP.1564.MA.ZS	Population ages 15-64, male (% of male population)
SP.POP.1564.TO	Population ages 15-64, total
SP.POP.1564.TO.ZS	Population ages 15-64 (% of total population)
SP.POP.2024.FE	Population ages 20-24, female
SP.POP.2024.FE.5Y	Population ages 20-24, female (% of female population)
SP.POP.2024.MA	Population ages 20-24, male
SP.POP.2024.MA.5Y	Population ages 20-24, male (% of male population)
SP.POP.2529.FE	Population ages 25-29, female
SP.POP.2529.FE.5Y	Population ages 25-29, female (% of female population)
SP.POP.2529.MA	Population ages 25-29, male
SP.POP.2529.MA.5Y	Population ages 25-29, male (% of male population)
SP.POP.3034.FE	Population ages 30-34, female
SP.POP.3034.FE.5Y	Population ages 30-34, female (% of female population)
SP.POP.3034.MA	Population ages 30-34, male
SP.POP.3034.MA.5Y	Population ages 30-34, male (% of male population)
SP.POP.3539.FE	Population ages 35-39, female
SP.POP.3539.FE.5Y	Population ages 35-39, female (% of female population)
SP.POP.3539.MA	Population ages 35-39, male
SP.POP.3539.MA.5Y	Population ages 35-39, male (% of male population)
SP.POP.4044.FE	Population ages 40-44, female
SP.POP.4044.FE.5Y	Population ages 40-44, female (% of female population)
SP.POP.4044.MA	Population ages 40-44, male
SP.POP.4044.MA.5Y	Population ages 40-44, male (% of male population)
SP.POP.4549.FE	Population ages 45-49, female
SP.POP.4549.FE.5Y	Population ages 45-49, female (% of female population)
SP.POP.4549.MA	Population ages 45-49, male
SP.POP.4549.MA.5Y	Population ages 45-49, male (% of male population)
SP.POP.5054.FE	Population ages 50-54, female
SP.POP.5054.FE.5Y	Population ages 50-54, female (% of female population)
SP.POP.5054.MA	Population ages 50-54, male
SP.POP.5054.MA.5Y	Population ages 50-54, male (% of male population)
SP.POP.5559.FE	Population ages 55-59, female

SP.POP.5559.FE.5Y	Population ages 55-59, female (% of female population)
SP.POP.5559.MA	Population ages 55-59, male
SP.POP.5559.MA.5Y	Population ages 55-59, male (% of male population)
SP.POP.6064.FE	Population ages 60-64, female
SP.POP.6064.FE.5Y	Population ages 60-64, female (% of female population)
SP.POP.6064.MA	Population ages 60-64, male
SP.POP.6064.MA.5Y	Population ages 60-64, male (% of male population)
SP.POP.6569.FE	Population ages 65-69, female
SP.POP.6569.FE.5Y	Population ages 65-69, female (% of female population)
SP.POP.6569.MA	Population ages 65-69, male
SP.POP.6569.MA.5Y	Population ages 65-69, male (% of male population)
SP.POP.65UP.FE.IN	Population ages 65 and above, female
SP.POP.65UP.FE.ZS	Population ages 65 and above, female (% of female population)
SP.POP.65UP.MA.IN	Population ages 65 and above, male
SP.POP.65UP.MA.ZS	Population ages 65 and above, male (% of male population)
SP.POP.65UP.TO	Population ages 65 and above, total
SP.POP.65UP.TO.ZS	Population ages 65 and above (% of total population)
SP.POP.7074.FE	Population ages 70-74, female
SP.POP.7074.FE.5Y	Population ages 70-74, female (% of female population)
SP.POP.7074.MA	Population ages 70-74, male
SP.POP.7074.MA.5Y	Population ages 70-74, male (% of male population)
SP.POP.7579.FE	Population ages 75-79, female
SP.POP.7579.FE.5Y	Population ages 75-79, female (% of female population)
SP.POP.7579.MA	Population ages 75-79, male
SP.POP.7579.MA.5Y	Population ages 75-79, male (% of male population)
SP.POP.80UP.FE	Population ages 80 and above, female
SP.POP.80UP.FE.5Y	Population ages 80 and above, female (% of female population)
SP.POP.80UP.MA	Population ages 80 and above, male
SP.POP.80UP.MA.5Y	Population ages 80 and above, male (% of male population)
SP.POP.AG00.FE.IN	Age population, age 00, female, interpolated
SP.POP.AG00.MA.IN	Age population, age 00, male, interpolated
SP.POP.AG01.FE.IN	Age population, age 01, female, interpolated
SP.POP.AG01.MA.IN	Age population, age 01, male, interpolated
SP.POP.AG02.FE.IN	Age population, age 02, female, interpolated
SP.POP.AG02.MA.IN	Age population, age 02, male, interpolated
SP.POP.AG03.FE.IN	Age population, age 03, female, interpolated
SP.POP.AG03.MA.IN	Age population, age 03, male, interpolated
SP.POP.AG04.FE.IN	Age population, age 04, female, interpolated
SP.POP.AG04.MA.IN	Age population, age 04, male, interpolated
SP.POP.AG05.FE.IN	Age population, age 05, female, interpolated
SP.POP.AG05.MA.IN	Age population, age 05, male, interpolated
SP.POP.AG06.FE.IN	Age population, age 06, female, interpolated
SP.POP.AG06.MA.IN	Age population, age 06, male, interpolated
SP.POP.AG07.FE.IN	Age population, age 07, female, interpolated
SP.POP.AG07.MA.IN	Age population, age 07, male, interpolated

SP.POP.AG08.FE.IN	Age population, age 08, female, interpolated
SP.POP.AG08.MA.IN	Age population, age 08, male, interpolated
SP.POP.AG09.FE.IN	Age population, age 09, female, interpolated
SP.POP.AG09.MA.IN	Age population, age 09, male, interpolated
SP.POP.AG10.FE.IN	Age population, age 10, female, interpolated
SP.POP.AG10.MA.IN	Age population, age 10, male, interpolated
SP.POP.AG11.FE.IN	Age population, age 11, female, interpolated
SP.POP.AG11.MA.IN	Age population, age 11, male, interpolated
SP.POP.AG12.FE.IN	Age population, age 12, female, interpolated
SP.POP.AG12.MA.IN	Age population, age 12, male, interpolated
SP.POP.AG13.FE.IN	Age population, age 13, female, interpolated
SP.POP.AG13.MA.IN	Age population, age 13, male, interpolated
SP.POP.AG14.FE.IN	Age population, age 14, female, interpolated
SP.POP.AG14.MA.IN	Age population, age 14, male, interpolated
SP.POP.AG15.FE.IN	Age population, age 15, female, interpolated
SP.POP.AG15.MA.IN	Age population, age 15, male, interpolated
SP.POP.AG16.FE.IN	Age population, age 16, female, interpolated
SP.POP.AG16.MA.IN	Age population, age 16, male, interpolated
SP.POP.AG17.FE.IN	Age population, age 17, female, interpolated
SP.POP.AG17.MA.IN	Age population, age 17, male, interpolated
SP.POP.AG18.FE.IN	Age population, age 18, female, interpolated
SP.POP.AG18.MA.IN	Age population, age 18, male, interpolated
SP.POP.AG19.FE.IN	Age population, age 19, female, interpolated
SP.POP.AG19.MA.IN	Age population, age 19, male, interpolated
SP.POP.AG20.FE.IN	Age population, age 20, female, interpolated
SP.POP.AG20.MA.IN	Age population, age 20, male, interpolated
SP.POP.AG21.FE.IN	Age population, age 21, female, interpolated
SP.POP.AG21.MA.IN	Age population, age 21, male, interpolated
SP.POP.AG22.FE.IN	Age population, age 22, female, interpolated
SP.POP.AG22.MA.IN	Age population, age 22, male, interpolated
SP.POP.AG23.FE.IN	Age population, age 23, female, interpolated
SP.POP.AG23.MA.IN	Age population, age 23, male, interpolated
SP.POP.AG24.FE.IN	Age population, age 24, female, interpolated
SP.POP.AG24.MA.IN	Age population, age 24, male, interpolated
SP.POP.AG25.FE.IN	Age population, age 25, female, interpolated
SP.POP.AG25.MA.IN	Age population, age 25, male, interpolated
SP.POP.BRTH.MF	Sex ratio at birth (male births per female births)
SP.POP.DPND	Age dependency ratio (% of working-age population)
SP.POP.DPND.OL	Age dependency ratio, old (% of working-age population)
SP.POP.DPND.YG	Age dependency ratio, young (% of working-age population)
SP.POP.GROW	Population growth (annual %)
SP.POP.TOTL	Population, total
SP.POP.TOTL.FE.IN	Population, female
SP.POP.TOTL.FE.ZS	Population, female (% of total population)
SP.POP.TOTL.MA.IN	Population, male
SP.POP.TOTL.MA.ZS	Population, male (% of total population)
SP.REG.BRTH.FE.ZS	Completeness of birth registration, female (%)

```
SP.REG.BRTH.MA.ZS     Completeness of birth registration, male (%)
SP.REG.BRTH.RU.ZS     Completeness of birth registration, rural (%)
SP.REG.BRTH.UR.ZS     Completeness of birth registration, urban (%)
SP.REG.BRTH.ZS        Completeness of birth registration (%)
SP.REG.DTHS.ZS        Completeness of death registration with cause-of-death
information (%)
SP.RUR.TOTL           Rural population
SP.RUR.TOTL.ZG        Rural population growth (annual %)
SP.RUR.TOTL.ZS        Rural population (% of total population)
SP.URB.GROW           Urban population growth (annual %)
SP.URB.TOTL           Urban population
SP.URB.TOTL.IN.ZS     Urban population (% of total population)
SP.UWT.TFRT           Unmet need for contraception (% of married women ages
15-49)
```

[4]:
```
chn_fr = wbdata.get_dataframe({'SH.DTH.NMRT':'Mortality rate, under-5 (per␣
↪1,000 live births)',
                               'SH.DYN.MORT.FE':'Mortality rate, under-5, female␣
↪(per 1,000 live births)',
                               'SH.DYN.MORT.MA':'Mortality rate, under-5, male␣
↪(per 1,000 live births)'}, country='CHN')
chn_fr.index = chn_fr.index.astype(int)
chn_fr.index = chn_fr.index.rename('year')
chn_fr = chn_fr.drop([2019, 2020])
chn_fr.head()
```

[4]:

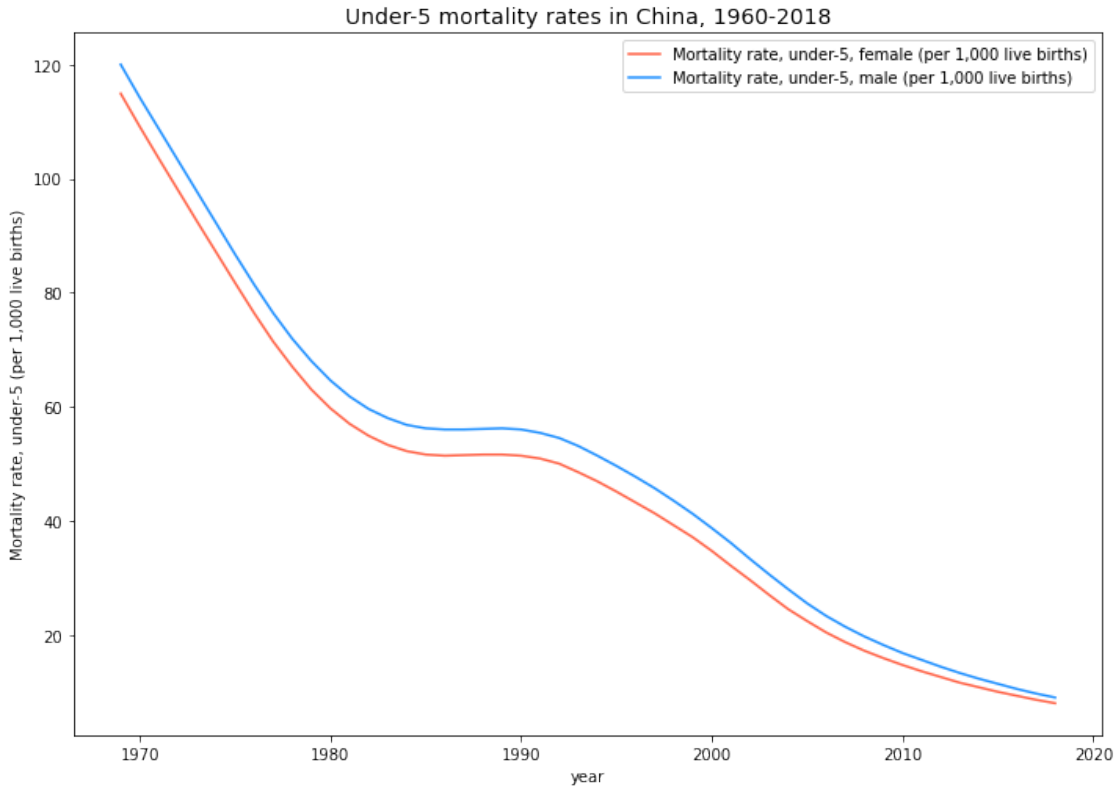
year	Mortality rate, under-5 (per 1,000 live births)	Mortality rate, under-5, female (per 1,000 live births)	Mortality rate, under-5, male (per 1,000 live births)
2018	70170.0	8.0	9.0
2017	77398.0	8.6	9.7
2016	85305.0	9.3	10.5
2015	93912.0	10.0	
2014	103120.0	10.8	

```
2015                                                    11.4
2014                                                    12.3
```

[5]:
```
fig = plt.figure(figsize=(11.75,8.25))
ax = plt.axes()


plt.plot(chn_fr.index, chn_fr.iloc[:, 1], color='tomato')
plt.plot(chn_fr.index, chn_fr.iloc[:, 2], color='dodgerblue')

ax.legend(chn_fr.columns[1:])
plt.xlabel('year')
plt.ylabel('Mortality rate, under-5 (per 1,000 live births)')
plt.title('Under-5 mortality rates in China, 1960-2018', fontdict={'fontsize':
 ↪14})
plt.show();
```



[6]:
```
chn_pop = wbdata.get_dataframe({'SP.POP.TOTL.FE.IN':'Population, female',
                                'SP.POP.TOTL.MA.IN':'Population, male',
                                'SP.POP.0004.FE':'Population ages 00-04, female',
                                'SP.POP.0004.MA':'Population ages 00-04, male'},␣
 ↪country='CHN')
```

```
chn_pop.index = chn_pop.index.astype(int)
chn_pop.index = chn_pop.index.rename('year')
chn_pop.drop([2020]).head()
```

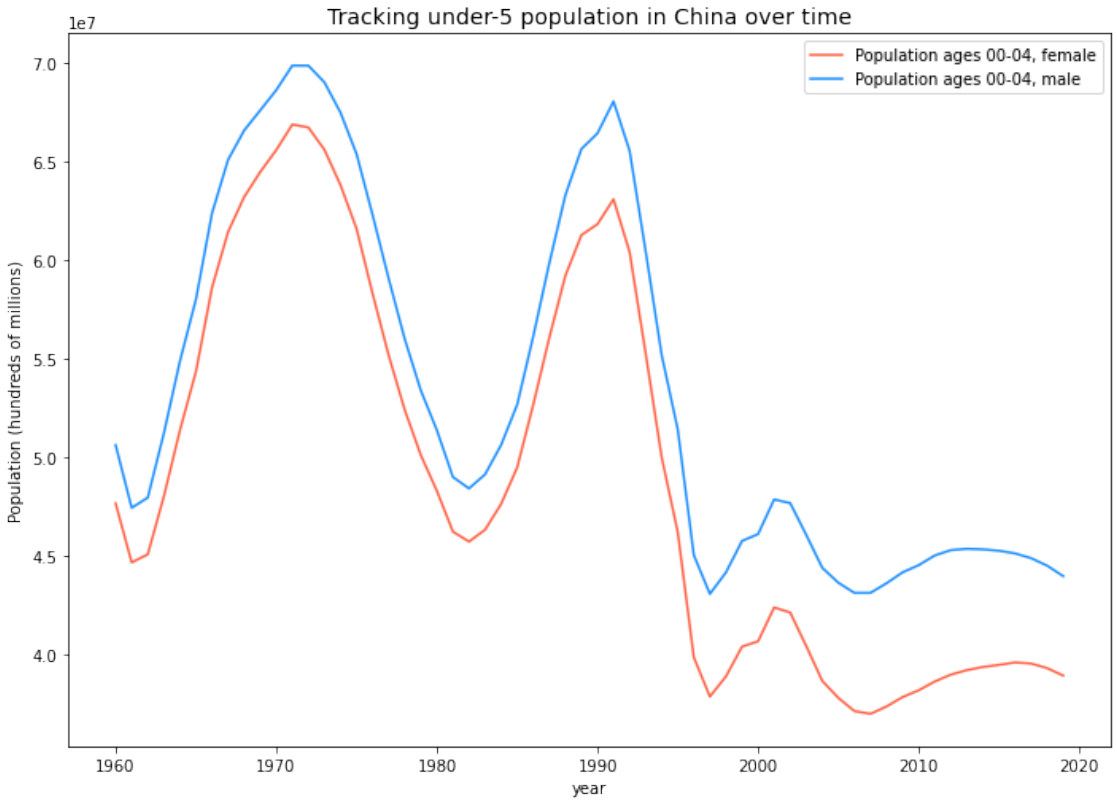
[6]:
```
      Population, female  Population, male  Population ages 00-04, female  \
year
2019         680596325.0       717118675.0                     38930156.0
2018         677972245.0       714757755.0                     39307468.0
2017         674707818.0       711687182.0                     39542519.0
2016         670780903.0       707884097.0                     39596016.0
2015         667009225.0       704210775.0                     39474973.0

      Population ages 00-04, male
year
2019                   43971560.0
2018                   44502954.0
2017                   44885574.0
2016                   45125907.0
2015                   45261623.0
```

[7]:
```
fig = plt.figure(figsize=(11.75,8.25))
ax = plt.axes()


plt.plot(chn_pop.index, chn_pop.iloc[:, 2], color='tomato')
plt.plot(chn_pop.index, chn_pop.iloc[:, 3], color='dodgerblue')

ax.legend(chn_pop.columns[2:])
plt.xlabel('year')
plt.ylabel('Population (hundreds of millions)')
plt.title('Tracking under-5 population in China over time',␣
 ↪fontdict={'fontsize':14})
plt.show();
```



0.1 Visualizing Life Expectancies

[8]:
```
def life_expectancy(region):
    df = wbdata.get_dataframe({'SP.DYN.LE00.IN':'Life expectancy at birth,␣
 ↪total (years)'}, country=region)
    df.index = df.index.astype(int)
    df.index = df.index.rename('year')
    df = df.drop([2020])
    return df
```

[9]:
```
wld_le = life_expectancy('WLD')
wld_le.head()
```

[9]:

year	Life expectancy at birth, total (years)
2019	NaN
2018	72.563282
2017	72.385581
2016	72.180761
2015	71.947403

[10]:
```
chn_le = life_expectancy('CHN')
chn_le.head()
```

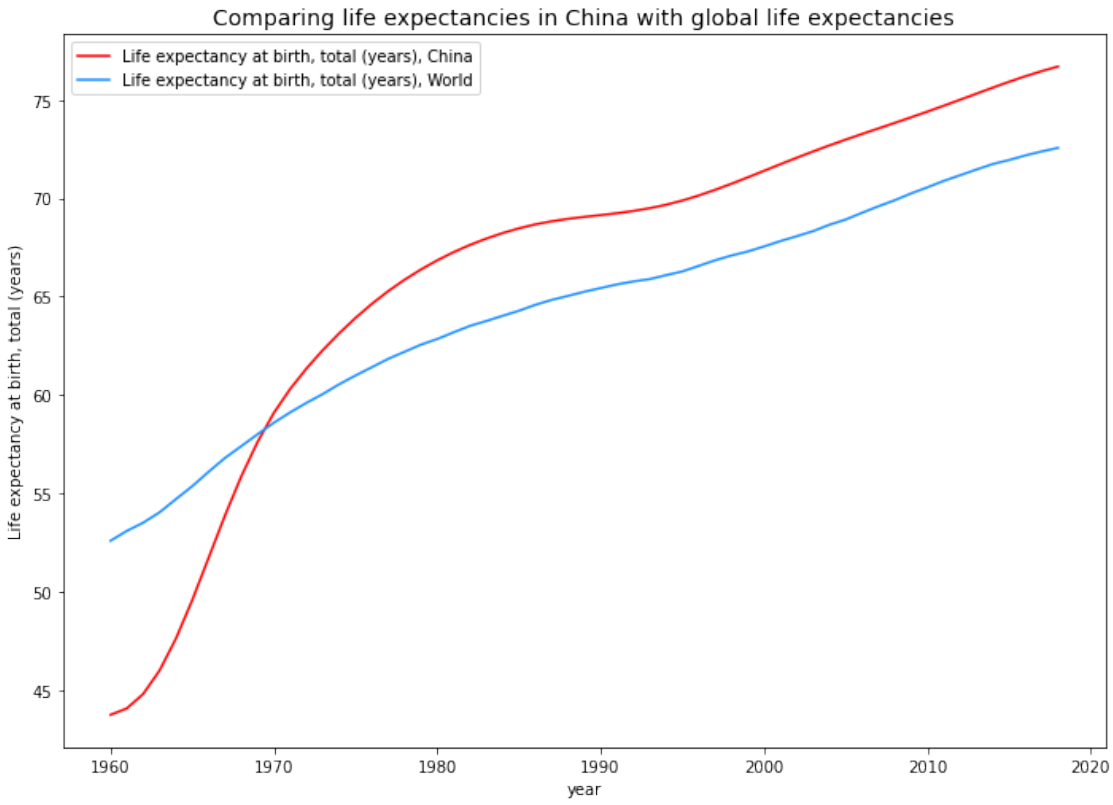
[10]:

year	Life expectancy at birth, total (years)
2019	NaN
2018	76.704
2017	76.470
2016	76.210
2015	75.928

[11]:
```
fig = plt.figure(figsize=(11.75,8.25))
ax = plt.axes()


plt.plot(chn_le.index, chn_le.iloc[:], color='red')
plt.plot(wld_le.index, wld_le.iloc[:], color='dodgerblue')

ax.legend((chn_le.columns+', China').append(wld_le.columns+', World'))
plt.xlabel('year')
plt.ylabel('Life expectancy at birth, total (years)')
plt.title('Comparing life expectancies in China with global life expectancies',␣
 ↪fontdict={'fontsize':14})
plt.show();
```



[ ]:

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