```
if (!"pacman" %in% installed.packages()[,"Package"]) install.packages("pacman",
repos='http://cran.r-project.org')
pacman::p_load(tidyverse,rdbnomics,magrittr,zoo,lubridate,kn
itr,kableExtra,formattable)

opts_chunk$set(fig.align="center", message=FALSE, warning=FALSE)

currentyear <- year(Sys.Date())
lastyear <- currentyear-1
beforelastyear <- currentyear-2
CountryList <- c("United States","China","Japan","Britain","Canada",
                 "Euro area","Austria","Belgium","France","Germany","Greece","
Italy","Netherlands","Spain",
                 "Czech Republic","Denmark","Norway","
Poland","Russia","Sweden","Switzerland","Turkey",
                 "Australia","Hong Kong","India","Indonesia","
Malaysia","Pakistan","Philippines","Singapore","South
Korea","Taiwan","Thailand",
                 "Argentina","Brazil","Chile","Colombia","Mexico","Peru",
                 "Egypt","Israel","Saudi Arabia","South Africa")
```

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```
gdp <- rdb("OECD","MEI",ids=".NAEXKP01.GPSA+GYSA.Q")
hongkong_philippines_thailand_gdp <-
  rdb("IMF","IFS",mask="Q.HK+PH+TH.NGDP_R_PC_CP_A_SA_PT+NGDP_R_PC_PP_SA_PT") %>%
  rename(Country=`Reference Area`) %>%
  mutate(Country=case_when(Country=="Hong Kong, China" ~ "Hong Kong",
                           TRUE ~ Country),
         MEASURE=case_when(INDICATOR=="NGDP_R_PC_CP_A_SA_PT" ~ "GYSA",
                           INDICATOR=="NGDP_R_PC_PP_SA_PT" ~ "GPSA"))
malaysia_peru_saudi_singapore_gdp <-
  rdb("IMF","IFS",mask="Q.MY+PE+SA+SG.NGDP_R_PC_CP_A_PT+NGDP_R_PC_PP_PT") %>%
  rename(Country=`Reference Area`) %>%
  mutate(MEASURE=case_when(INDICATOR=="NGDP_R_PC_CP_A_PT" ~ "GYSA",
                           INDICATOR=="NGDP_R_PC_PP_PT" ~ "GPSA"))
taiwan_gdp <-
  rdb("BI/TABEL9_1/17.Q") %>%
  mutate(Country="Taiwan",
         MEASURE="GYSA")
egypt_pakistan_gdp <-
  rdb("IMF","WEO",mask="EGY+PAK.NGDP_RPCH") %>%
  rename(Country=`WEO Country`) %>%
  mutate(MEASURE="GYSA") %>%
  filter(year(period)<currentyear)
china_gdp_level <-
  rdb(ids="OECD/MEI/CHN.NAEXCP01.STSA.Q")
gdp_qoq_china <-
  china_gdp_level %>%
  arrange(period) %>%
  mutate(value=value/lag(value)-1,
         MEASURE="GPSA")
gdp_yoy_china <-
  china_gdp_level %>%
  arrange(period) %>%
  mutate(quarter=quarter(period)) %>%
```

```
  group_by(quarter) %>%
  mutate(value=value/lag(value)-1,
         MEASURE="GYSA")
argentina_gdp_level <-
  rdb(ids="Eurostat/naidq_10_gdp/Q.SCA.KP_I10.B1GQ.AR") %>%
  rename(Country=`Geopolitical entity (reporting)`)
gdp_qoq_argentina <-
  argentina_gdp_level %>%
  arrange(period) %>%
  mutate(value=value/lag(value)-1,
         MEASURE="GPSA")
gdp_yoy_argentina <-
  argentina_gdp_level %>%
  arrange(period) %>%
  mutate(quarter=quarter(period)) %>%
  group_by(quarter) %>%
  mutate(value=value/lag(value)-1,
         MEASURE="GYSA")
gdp <- bind_rows(gdp,hongkong_philippines_thailand_gdp,malay
sia_peru_saudi_singapore_gdp,taiwan_gdp,egypt_pakistan_gdp,g
dp_yoy_china,gdp_qoq_china,gdp_yoy_argentina,gdp_qoq_argentina)

indprod <- rdb("OECD","MEI",ids=".PRINTO01.GYSA.M")
australia_swiss_indprod <- rdb("OECD","MEI","AUS+CHE.PRINTO01.GYSA.Q")
china_egypt_mexico_malaysia_indprod <-
  rdb("IMF","IFS",mask="M.CN+EG+MX+MY.AIP_PC_CP_A_PT") %>%
  rename(Country=`Reference Area`)
indonesia_pakistan_peru_philippines_singapore_southafrica_indprod <-
  rdb("IMF","IFS",mask="M.ID+PK+PE+PH+SG+ZA.AIPMA_PC_CP_A_PT") %>%
  rename(Country=`Reference Area`)
argentina_hongkong_saudiarabia_thailand_indprod <-
  rdb("IMF","IFS",mask="Q.AR+HK+SA+TH.AIPMA_PC_CP_A_PT") %>%
  rename(Country=`Reference Area`) %>%
  mutate(Country=case_when(Country=="Hong Kong, China" ~ "Hong Kong",
                           TRUE ~ Country))
indprod <- bind_rows(indprod,australia_swiss_indprod,china_egypt_
mexico_malaysia_indprod,indonesia_pakistan_peru_philippines_
singapore_southafrica_indprod,argentina_hongkong_saudiarabia_thailand_indprod)

cpi <- rdb("OECD","MEI",ids=".CPALTT01.GY.M")
australia_cpi <- rdb("OECD","MEI",ids="AUS.CPALTT01.GY.Q")
taiwan_cpi <-
  rdb("BI/TABEL9_2/17.Q") %>%
  mutate(Country="Taiwan")
other_cpi <-
  rdb("IMF","IFS",mask="M.EG+HK+MY+PE+PH+PK+SG+TH.PCPI_PC_CP_A_PT") %>%
  rename(Country=`Reference Area`) %>%
  mutate(Country=case_when(Country=="Hong Kong, China" ~ "Hong Kong",
                           TRUE ~ Country))
cpi <- bind_rows(cpi,australia_cpi,taiwan_cpi,other_cpi)

unemp <- rdb("OECD","MEI",ids=".LRHUTTTT.STSA.M")
swiss_unemp <- rdb("OECD","MEI",mask="CHE.LMUNRRTT.STSA.M")
brazil_unemp <- rdb("OECD","MEI",mask="BRA.LRUNTTTT.STSA.M")
southafrica_russia_unemp <- rdb("OECD","MEI",mask="ZAF+RUS.LRUNTTTT.STSA.Q")
china_unemp <-
  rdb(ids="BUBA/BBXL3/Q.CN.N.UNEH.TOTAL0.NAT.URAR.RAT.I00") %>%
```

```
  mutate(Country="China")
saudiarabia_unemp <-
  rdb(ids="ILO/UNE_DEAP_SEX_AGE_RT/SAU.BA_627.AGE_AGGREGATE_TOTAL.SEX_T.A") %>%
  rename(Country=`Reference area`) %>%
  filter(year(period)<currentyear)
india_unemp <-
  rdb(ids="ILO/UNE_2EAP_SEX_AGE_RT/IND.XA_1976.AGE_YTHADULT_YGE15.SEX_T.A") %>%
  rename(Country=`Reference area`) %>%
  filter(year(period)<currentyear)
indonesia_pakistan_unemp <-
  rdb("ILO","UNE_DEAP_SEX_AGE_EDU_RT",mask="IDN+PAK..AGE_
AGGREGATE_TOTAL.EDU_AGGREGATE_TOTAL.SEX_T.Q") %>%
  rename(Country=`Reference area`)
other_unemp <-
  rdb("ILO","UNE_DEA1_SEX_AGE_RT",mask="ARG+EGY+HKG+MYS+PER+
PHL+SGP+THA+TWN..AGE_YTHADULT_YGE15.SEX_T.Q") %>%
  rename(Country=`Reference area`) %>%
  mutate(Country=case_when(Country=="Hong Kong, China" ~ "Hong Kong",
                           Country=="Taiwan, China" ~ "Taiwan",
                           TRUE ~ Country))
unemp <- bind_rows(unemp,brazil_unemp,southafrica_russia_unemp,swiss_
unemp,china_unemp,saudiarabia_unemp,india_unemp,indonesia_
pakistan_unemp,other_unemp)

forecast_gdp_cpi_ea <-
  rdb("IMF","WEOAGG",mask="163.NGDP_RPCH+PCPIPCH") %>%
  rename(`WEO Country`=`WEO Countries group`)
forecast_gdp_cpi <-
  rdb("IMF","WEO",mask=".NGDP_RPCH+PCPIPCH") %>%
  bind_rows(forecast_gdp_cpi_ea) %>%
  transmute(Country=`WEO Country`,
            var=`WEO Subject`,
            value,
            period) %>%
  mutate(Country=str_trim(Country),
         var=str_trim(var)) %>%
  mutate(Country=case_when(Country=="United Kingdom" ~ "Britain",
                           Country=="Hong Kong SAR" ~ "Hong Kong",
                           Country=="Korea" ~ "South Korea",
                           Country=="Taiwan Province of China" ~ "Taiwan",
                           TRUE ~ Country),
         var=case_when(var=="Gross domestic product, constant prices" ~ "GDP",
                       var=="Inflation, average consumer prices" ~ "CPI",
                       TRUE ~ var))
forecast_gdp_cpi <- left_join(data.frame(Country=CountryList),forecast_gdp_cpi,b
y="Country")
```

Transform

```
gdp_yoy_latest_period <-
  gdp %>%
  filter(MEASURE=="GYSA") %>%
  filter(!is.na(value)) %>%
  group_by(Country) %>%
  summarise(period=max(period))
gdp_yoy_latest <-
  gdp %>%
  filter(MEASURE=="GYSA") %>%
```

```
  inner_join(gdp_yoy_latest_period) %>%
  mutate(var="GDP",measure="latest")

gdp_qoq_latest_period <-
  gdp %>%
  filter(MEASURE=="GPSA") %>%
  filter(!is.na(value)) %>%
  group_by(Country) %>%
  summarise(period=max(period))
gdp_qoq_latest <-
  gdp %>%
  filter(MEASURE=="GPSA") %>%
  inner_join(gdp_qoq_latest_period) %>%
  mutate(value=((1+value/100)^4-1)*100,
         var="GDP",
         measure="quarter")

gdp_2020_2021 <-
  forecast_gdp_cpi %>%
  filter(var=="GDP" & (period=="2020-01-01" | period=="2021-01-01")) %>%
  mutate(measure=as.character(year(period)))

indprod_latest_period <-
  indprod %>%
  filter(!is.na(value)) %>%
  group_by(Country) %>%
  summarise(period=max(period))
indprod_latest <-
  indprod %>%
  inner_join(indprod_latest_period) %>%
  mutate(var="indprod",measure="latest")

cpi_latest_period <-
  cpi %>%
  filter(!is.na(value)) %>%
  group_by(Country) %>%
  summarise(period=max(period))
cpi_latest <-
  cpi %>%
  inner_join(cpi_latest_period) %>%
  mutate(var="CPI",measure="latest")

cpi_2020 <-
  forecast_gdp_cpi %>%
  filter(var=="CPI" & period=="2020-01-01") %>%
  mutate(measure=as.character(year(period)))

unemp_latest_period <-
  unemp %>%
  filter(!is.na(value)) %>%
  group_by(Country) %>%
  summarise(period=max(period))
unemp_latest <-
  unemp %>%
  inner_join(unemp_latest_period) %>%
  mutate(var="unemp",measure="latest")
```

Merge

```
df_all <-
  bind_rows(gdp_yoy_latest,gdp_qoq_latest,gdp_2020_2021,indpr
od_latest,cpi_latest,cpi_2020,unemp_latest) %>%
  mutate(value=ifelse(value>=0,
                      paste0("+",sprintf("%.1f",round(value,1))),
                      sprintf("%.1f",round(value,1)))) %>%
  unite(measure,c(var,measure))

df_latest <-
  df_all %>%
  filter(measure %in% c("GDP_latest","indprod_latest","CPI_latest","unemp_
latest")) %>%
  mutate(value=case_when(`@frequency`=="quarterly" ~ paste(value,"
Q",quarter(period),sep=""),
                         `@frequency`=="monthly" ~ paste(value,"
",month(period,label = TRUE, abbr = TRUE, locale = "en_US.utf8"),sep=""),
                         `@frequency`=="annual" ~ paste(value," Year",sep=""),
                         TRUE ~ value)) %>%
  mutate(value=text_spec(ifelse(year(period)==lastyear,paste0(
value,footnote_marker_symbol(3)),
                                ifelse(year(period)==beforelas
tyear,paste0(value,footnote_marker_symbol(4)),value)),
                         link = paste("https://db.nomics.world
",provider_code,dataset_code,series_code,sep = "/"),
                         color = "#333333",escape = F,extra_css="text-
decoration:none"))

df_final <-
  df_all %>%
  filter(measure %in% c("GDP_quarter","GDP_2020","GDP_2021","CPI_2020")) %>%
  bind_rows(df_latest) %>%
  mutate(Country=case_when(Country=="United Kingdom" ~ "Britain",
                           Country=="Euro area (19 countries)" ~ "Euro area",
                           Country=="China (People's Republic of)" ~ "China",
                           Country=="Korea" ~ "South Korea",
                           TRUE ~ Country)) %>%
  select(Country,value,measure) %>%
  spread(measure,value) %>%
  select(Country,GDP_latest,GDP_quarter,GDP_2020,GDP_2021,indp
rod_latest,CPI_latest,CPI_2020,unemp_latest)

df_final <- left_join(data.frame(Country=CountryList),df_final,by="Country")
```

Display

```
names(df_final)[1] <- ""
names(df_final)[2] <- "latest"
names(df_final)[3] <- paste0("quarter",footnote_marker_symbol(1))
names(df_final)[4] <- paste0("2020",footnote_marker_symbol(2))
names(df_final)[5] <- paste0("2021",footnote_marker_symbol(2))
names(df_final)[6] <- "latest"
names(df_final)[7] <- "latest"
names(df_final)[8] <- paste0("2020",footnote_marker_symbol(2))
names(df_final)[9] <- "latest"

df_final %>%
```

```
  kable(row.names = F,escape = F,align = c("l",rep("c",8)),caption = "Economic
data (% change on year ago)") %>%
  kable_styling(bootstrap_options = c("striped", "hover","responsive"),
fixed_thead = T, font_size = 13) %>%
  add_header_above(c(" " = 1, "Gross domestic product" = 4, "Industrial
production  " = 1, "Consumer prices"= 2, "Unemployment rate, %"=1)) %>%
  column_spec(1, bold = T) %>%
  row_spec(seq(1,nrow(df_final),by=2), background = "#D5E4EB") %>%
  row_spec(c(5,14,22,33,39),extra_css = "border-bottom: 1.2px solid") %>%
  footnote(general = "DBnomics (Eurostat, ILO, IMF, OECD and national sources).
Click on the figures in the `latest` columns to see the full time series.",
           general_title = "Source: ",
           footnote_as_chunk = T,
           symbol = c("% change on previous quarter, annual rate ", "IMF
estimation/forecast", paste0(lastyear),paste0(beforelastyear)))
```
