2023春季学期金融学本科选修课程

国际投资

第3讲 汇率制度

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暨南大學 JINAN UNIVERSITY

回顾与展望

- 上一节课：跨境资本自由流动、政府不干预下汇率的决定机制
- 这一节课：不同国家采取的不同汇率制度，其中的得失

议程

- 浮动汇率 vs. 固定汇率

固定汇率

- 出于国家利益，一些国家会选择让自己国家的汇率固定不浮动
- 为什么？

固定汇率

- 出于国家利益，一些国家会选择让自己国家的汇率固定不浮动
- 促进贸易与投资的稳定性
- 建立货币与财政政策的纪律性
- 有意压低自身货币的币值，使自身出口的产品在国际上具有竞争力
  - 中国（过去）、越南（现在）

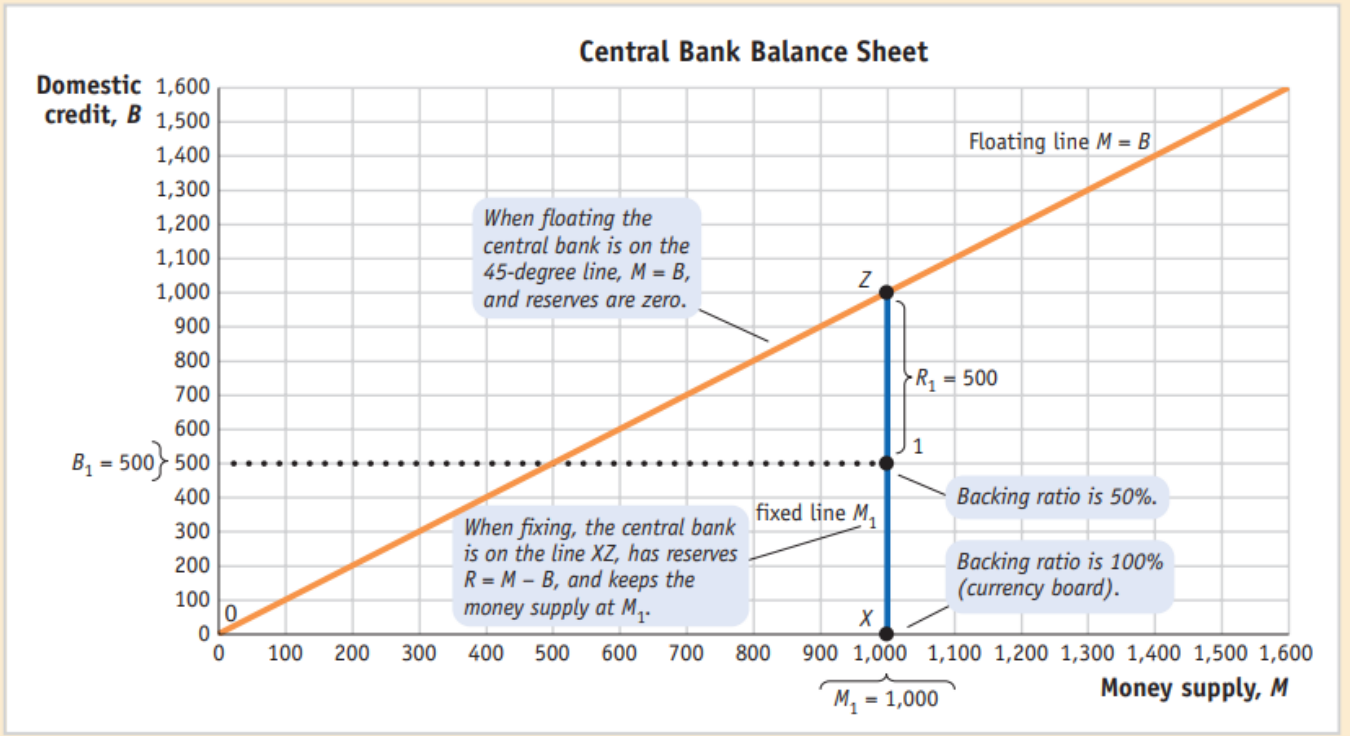
固定汇率的实现形式

- 具体是如何实现的？
  - 央行出面在外汇市场上买入卖出外汇，在本国汇率维持在一定水平
  - 央行出台相应的货币政策，控制本国货币供给与利率水平
  - 控制跨境资本的流动（中国&越南）

固定汇率的实现形式（不控制资本流动）

- 中央银行持有两部分资产
  - 本国信贷(domestic credit，以B表示)
  - 外汇储备(reserve，以R表示)
- 假定汇率定为E，则本国货币供给（以M表示）为E*R+B
  - E*R：在中国叫外汇占款（所有外汇转化为储备）
- M=E*R+B被称为央行的资产负债表
  - 左侧：负债；右侧：资产
- 当一个国家央行没有外汇储备的时候，我们说这个国家的汇率是完全浮动（entirely floating）
  - 现实中各国央行都或多或少持有一定的储备以应对特殊情况
- 具体操作形式：在外汇市场上通过外汇储备买卖本国货币

固定汇率的实现形式（不控制资本流动）



The Central Bank Balance Sheet Diagram This figure and those that follow present a simplified view of central bank operations. On the 45-degree line, reserves are at zero, and the money supply M equals domestic credit B. Variations in the money supply along this line would cause the exchange rate to float. There is a unique level of the money supply M_1 (here assumed to be 1,000) that ensures the exchange rate is at its chosen fixed value. To fix the money supply at this level, the central bank must choose a mix of assets on its balance sheet that corresponds to points on line XZ, points at which domestic credit B is less than money supply M. At point Z, reserves would be at zero; at point X, reserves would be 100% of the money supply. Any point in between on XZ is a feasible choice. At point 1, for example, domestic credit is $B_1 = 500$, reserves are $R_1 = 500$, and $B_1 + R_1 = M_1 = 1{,}000$.

浮动汇率 vs. 固定汇率的本质区别

- 在不限制资本跨境流动的前提下：
- 浮动汇率：
  - 汇率为内生变量
  - 本土货币供给为外生变量
- 固定汇率：
  - 汇率为外生变量
  - 本土货币供给为内生变量

*外生变量：被动决定的变量；内生变量：被动决定的变量

固定汇率的实现形式（控制资本流动）

- 约定官方的兑换比率
- 控制本币向境外的流出
- 限制外汇在国内的流通

维持固定汇率是有成本的

- 牺牲消费者的福利
- 需要充足的外汇储备
  - 外汇储备的不足有可能引发国际收支危机
- 黑市不可避免（资本管制的情形下）

议程

- 浮动汇率 vs. 固定汇率
- 不可能三角

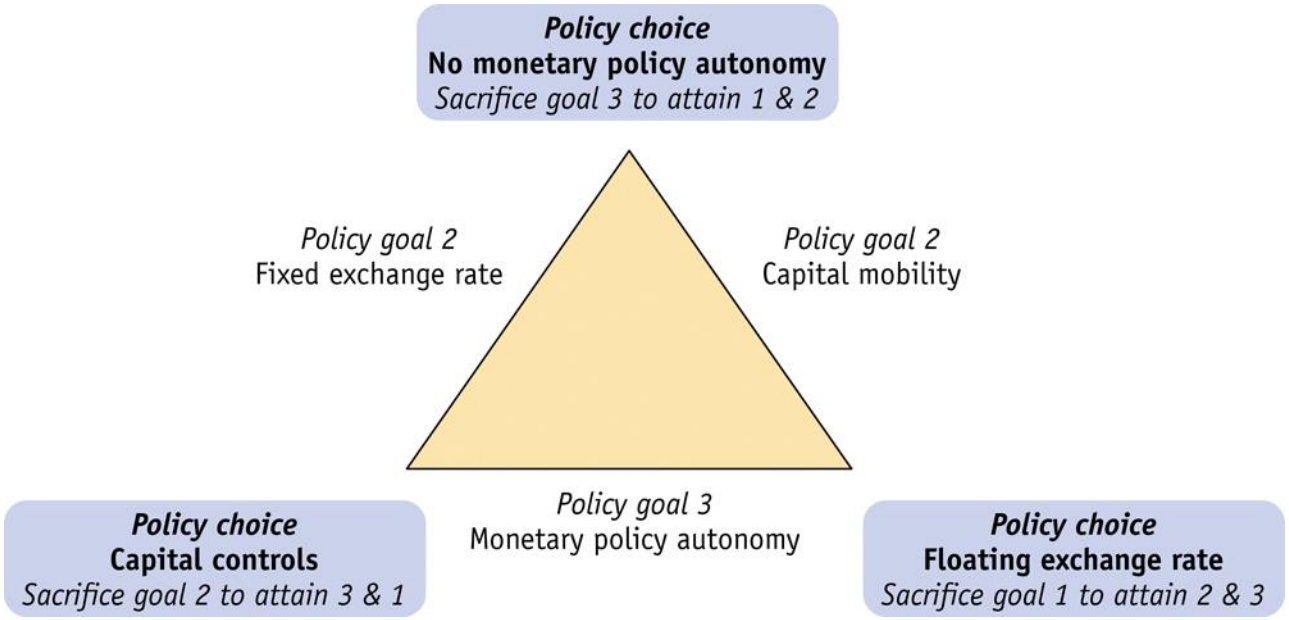
三个政策目标

- 一个国家有如下三个政策目标：
  1. 固定汇率：
  2. 资本自由流动
  3. 货币政策独立性：
- 1：提供贸易&投资的稳定性
- 2：对国际资本有更好的吸引力
- 3：获取对本国经济周期的调节自主权
- 这三个目标可以同时实现吗？

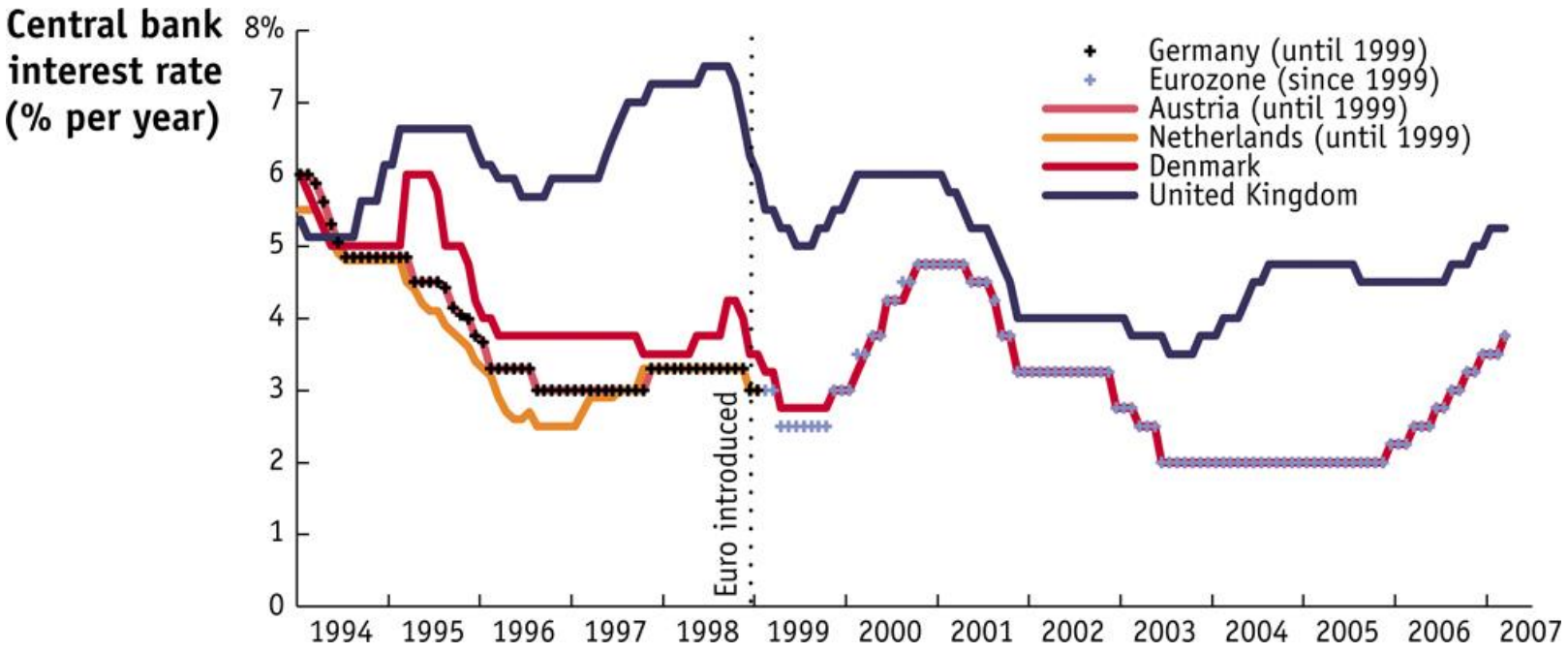
不可能三角

- 一个国家有如下三个政策目标：
  1. 固定汇率；
  2. 资本自由流动
  3. 货币政策独立性；
- 然而，这三个目标并不能够同时实现：
  - 1+2意味着跨国间的利率水平必须相等，与3矛盾
  - 2+3意味着汇率会根据利率水平相应调整，与1矛盾
  - 1+3意味着跨国间的利率可能存在不同，与2矛盾
- 这被称之为国际金融政策中的“不可能三角”（the Trilemma）

不可能三角


Policy choice
No monetary policy autonomy
Sacrifice goal 3 to attain 1 & 2
Policy goal 2
Fixed exchange rate
Policy goal 2
Capital mobility
Policy goal 3
Monetary policy autonomy
Policy choice
Capital controls
Sacrifice goal 2 to attain 3 & 1
Policy choice
Floating exchange rate
Sacrifice goal 1 to attain 2 & 3

案例：欧洲国家的利率


Central bank interest rate (% per year)
8%
7
6
5
4
3
2
1
0
Germany (until 1999)
Eurozone (since 1999)
Austria (until 1999)
Netherlands (until 1999)
Denmark
United Kingdom
Euro introduced
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007

议程

- 浮动汇率 vs. 固定汇率
- 不可能三角
- 现实中的汇率制度

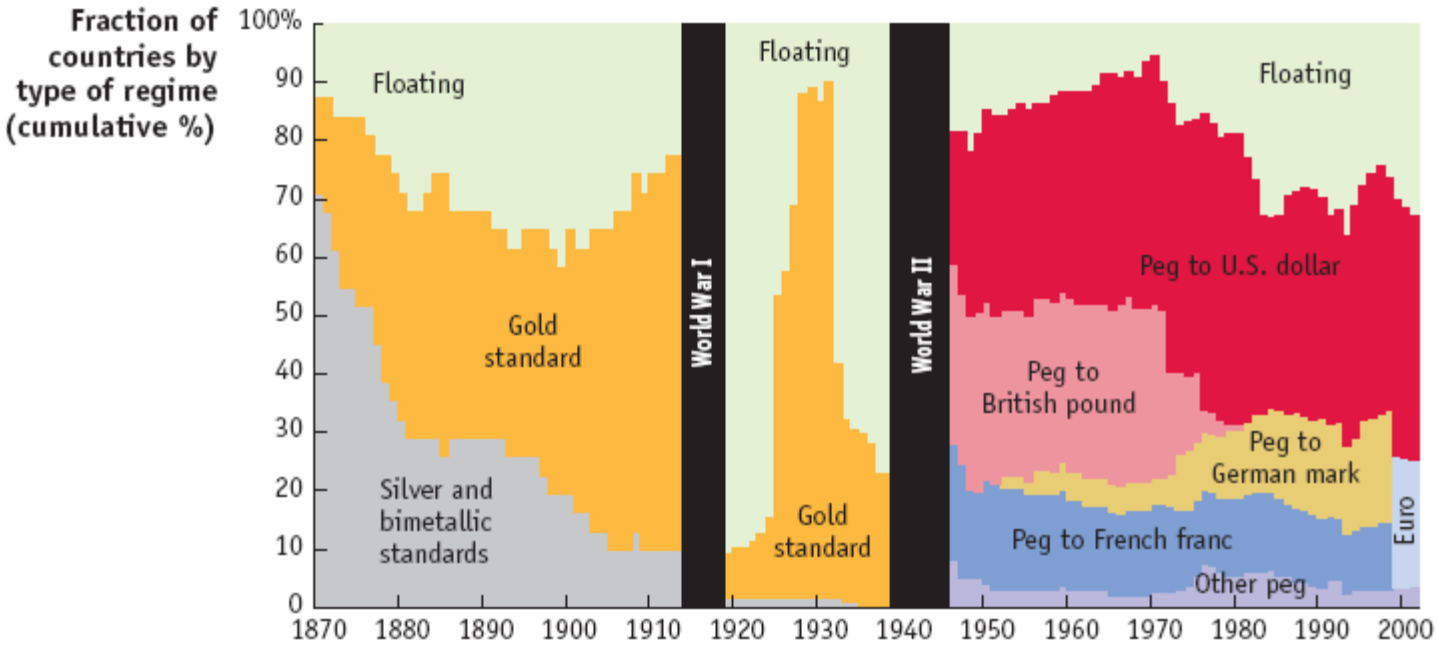
现实中的汇率制度

- 现实中大部分国家采取的汇率制度介于完全的固定和完全的浮动之间
- 全世界各国采取的汇率制度类型分布
- 几种常见的制度：
  - 完全浮动（independently floating）
  - 有管理的浮动（managed floating）
  - 爬行盯住汇率（crawling pegs）：平时盯住，一段时间视通胀调整
  - 联系汇率制（currency board）：将本币与某特定外币的汇率固定
  - 直接采用外币（no separate legal tender）：不具有自身独立的法币
    - 采用他国货币（dollarization）
    - 货币联盟（currency union）

议程

- 浮动汇率 vs. 固定汇率
- 不可能三角
- 现实中的汇率制度
- 国际汇率制度的变迁

国际汇率制度的变迁

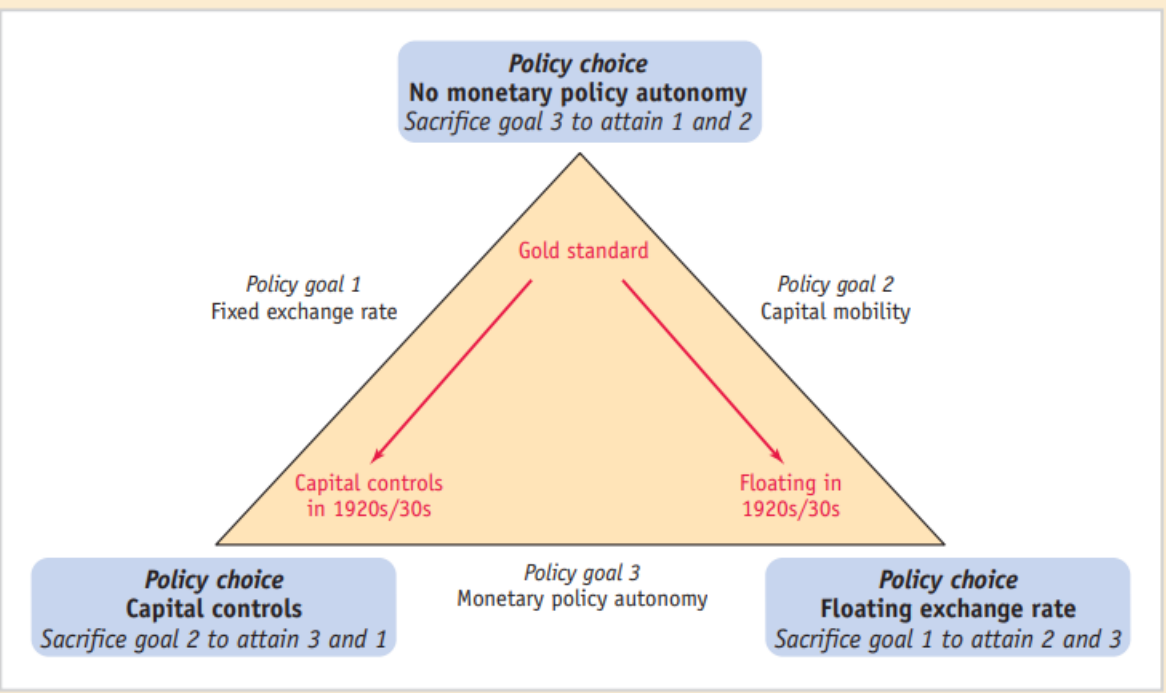


◆ 视频（49”-8’28”）：
https://www.bilibili.com/video/BV1XV411B7tX/?spm_id_from=333.1007.top_right_bar_window_history.content.click&vd_source=2fc9771984678a6c06e224706c2c231b

国际汇率制度的变迁

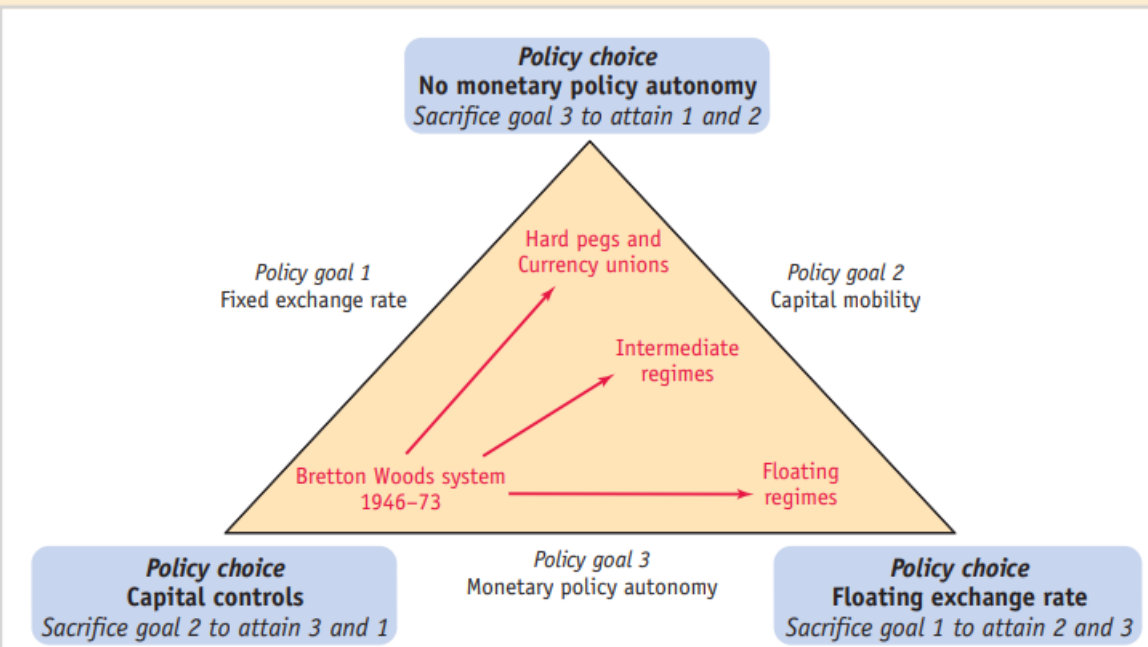
- 1870 – 1913：金银本位制（gold standard；bimetallic standard）
  - 第一次全球化（First Globalization）
  - 整体上，固定汇率（金本位）的好处要显著大于坏处，越来越多国家采纳
  - 负面影响：1890s起的美国通货紧缩；中国的“银贵钱贱”危机
- 1914（一战）- 1930s（大萧条）：金本位被削弱
- 二战/布雷顿森林体系 – 1970s:大多数国家选择盯住美元
- 1970s - 至今：越来越多的国家采用浮动汇率制
  - 国际投资的黄金时代

历史经验：金本位的崩溃



Solutions to the Trilemma before and after World War I Each corner of the triangle represents a viable policy choice. The labels on the two adjacent edges of the triangle are the goals that can be attained; the label on the opposite edge is the goal that has to be sacrificed. Trade gains and an absence of (or political indifference to) stability costs help explain how the gold standard came into being before 1914 (top corner). Subsequently, reduced trade gains and higher actual (or politically relevant) stability costs help explain the ultimate demise of the gold standard in the 1920s and 1930s. Countries sought new solutions to the trilemma to achieve policy autonomy, either by floating (bottom right corner) or by adopting capital controls (bottom left corner).

历史经验：布雷顿森林体系的崩溃

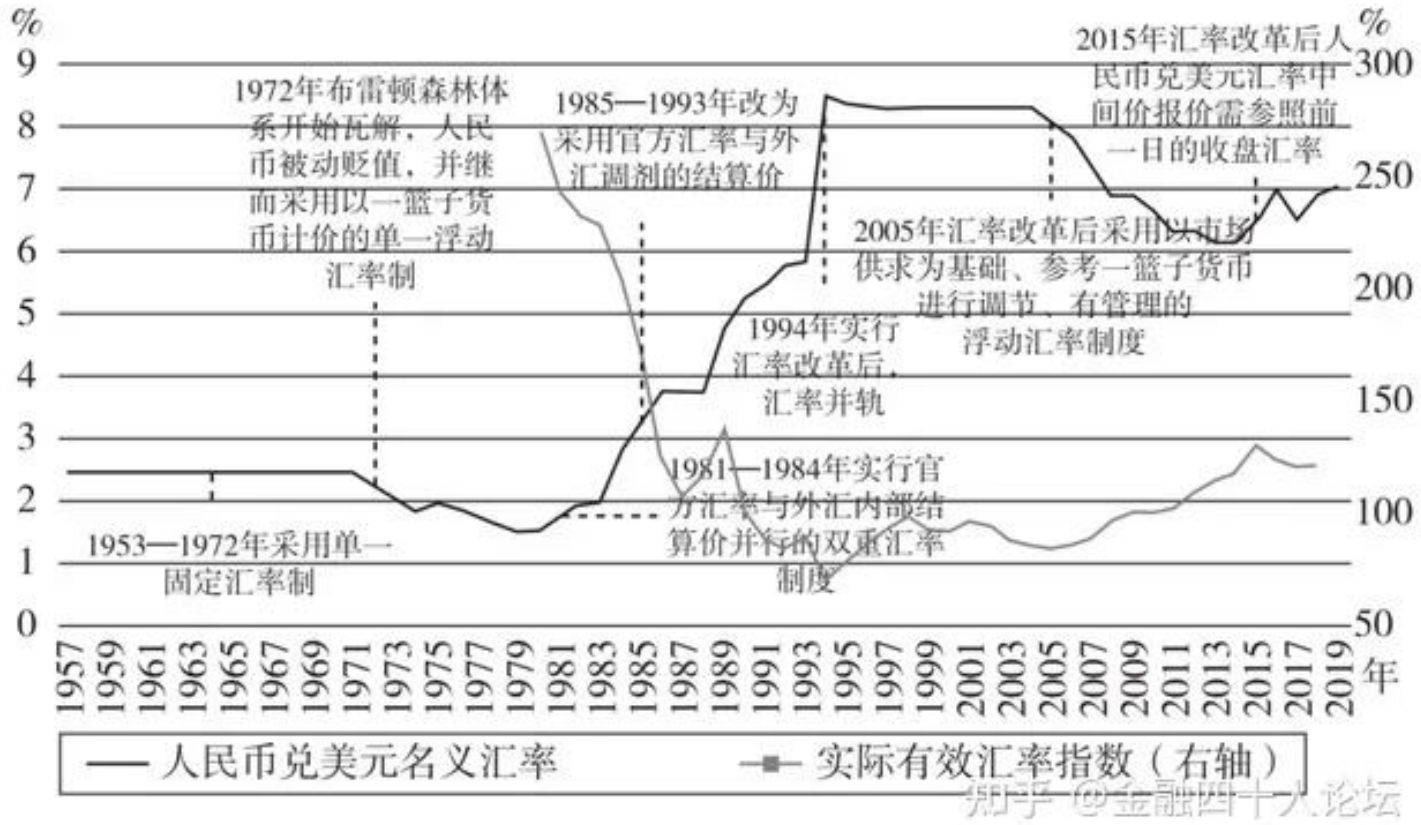


Solutions to the Trilemma since World War II In the 1960s, the Bretton Woods system became unsustainable because capital mobility could not be contained. Thus, countries could no longer have fixed rates and monetary autonomy (bottom left corner). In the advanced countries, the trilemma was resolved by a shift to floating rates, which preserved autonomy and allowed for the present era of capital mobility (bottom right corner). The main exception was the currency union of the Eurozone. In developing countries and emerging markets, the "fear of floating" was stronger; when capital markets were opened, monetary policy autonomy was more often sacrificed and fixed exchange rates were maintained (top corner).

议程

- 浮动汇率 vs. 固定汇率
- 不可能三角
- 现实中的汇率制度
- 国际汇率制度的变迁
- 中国的汇率制度变迁

人民币对美元汇率走势（$E_{¥/\$}$）



资料来源：“8·11”六周年|人民币汇改简史，中国金融四十人论坛

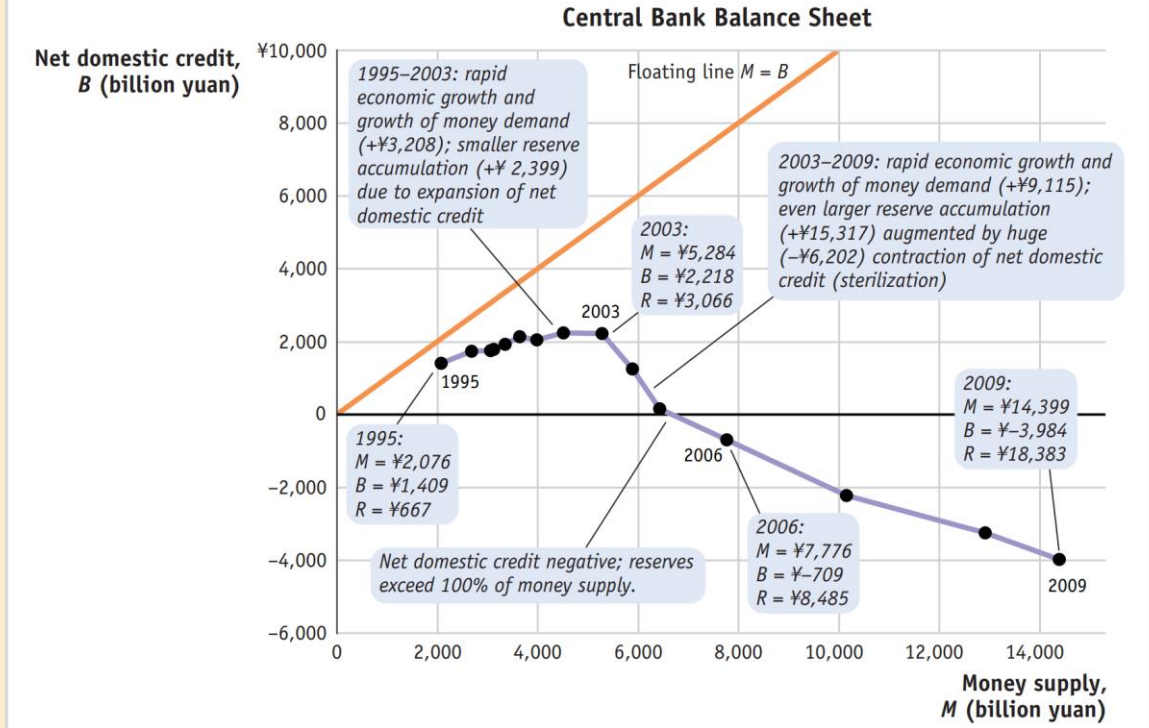
第一阶段：固定汇率

- 1978年12月，人民币实行了汇率双轨制度，人民币只能在境内使用，外国人必须使用外汇兑换券
- 1981年—1984年，人民币内部结算价和官方汇率并存的双重汇率制度时期
- 1985年1月1日内部结算价被取消，转而实行官方汇率和外汇调剂市场汇率并存的制度，这一制度从1985年一直持续到1993年
- 1994年1月，中国废除汇率双轨制度，将官方汇率与外汇调剂价并轨，将人民币汇率从5.8，一次性贬值至8.6，贬值大约33%
- 1997年—2005年，人民币汇率紧盯美元，汇率在8.27—8.28之间

第二阶段：固定→单边升值轨道

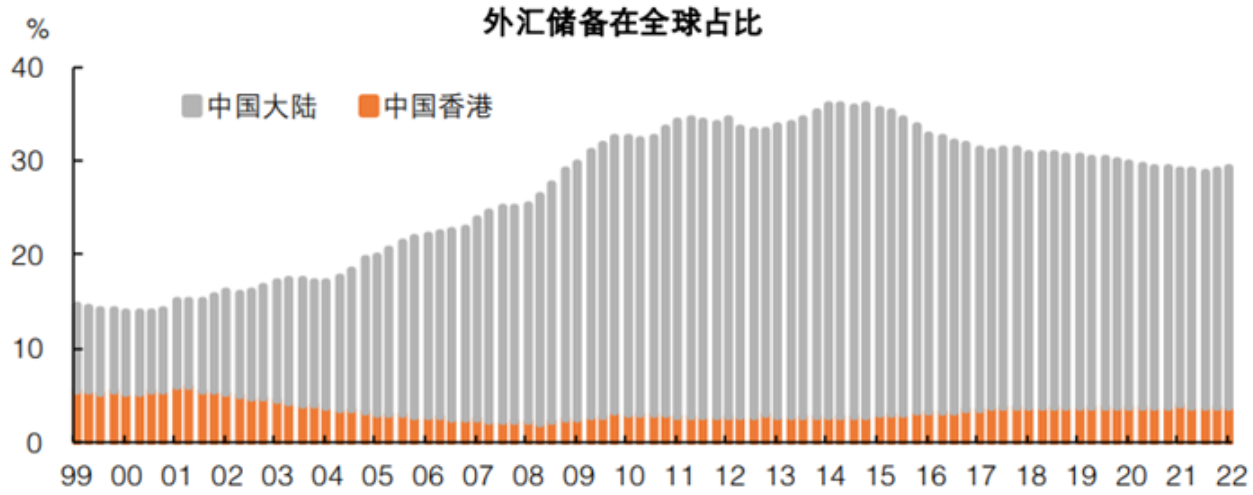
- **2005年7月中国正式宣布实行浮动汇率制度，**人民币汇率制度由原来盯住美元，转变为“以市场供求为基础、参考一篮子货币进行调节、有管理的浮动汇率制度”。人民币兑美元汇率每交易日波幅为±0.3%，2007年5月波动幅度进一步扩大至±0.5%
- 开启了汇率改革的序幕

第二阶段：以超额外汇储备防范汇率风险



Sterilization in China By issuing "sterilization bonds," central banks can borrow from domestic residents to buy more reserves. With sufficient borrowing of this kind, the central bank can end up with negative net domestic credit and reserves in excess of 100% of the money supply. The chart shows how this has happened in China in recent years: from 1995 to 2003 net domestic credit in China was steady, and so reserve growth was almost entirely driven by money demand growth (large movement to the right). From 2003 to 2009 extensive sterilization (large movement down) sent net domestic credit below zero, and, despite still-strong money demand growth, sterilization accounts for about 40% of the reserve growth in the later period. China's reserves even grew during the 2008–2009 global financial crisis period, a time when other countries ran down their reserves somewhat (see Figure 20-11). *Source: People's Bank of China.*

第二阶段：以超额外汇储备防范汇率风险



来源：Wind, 平安证券研究所

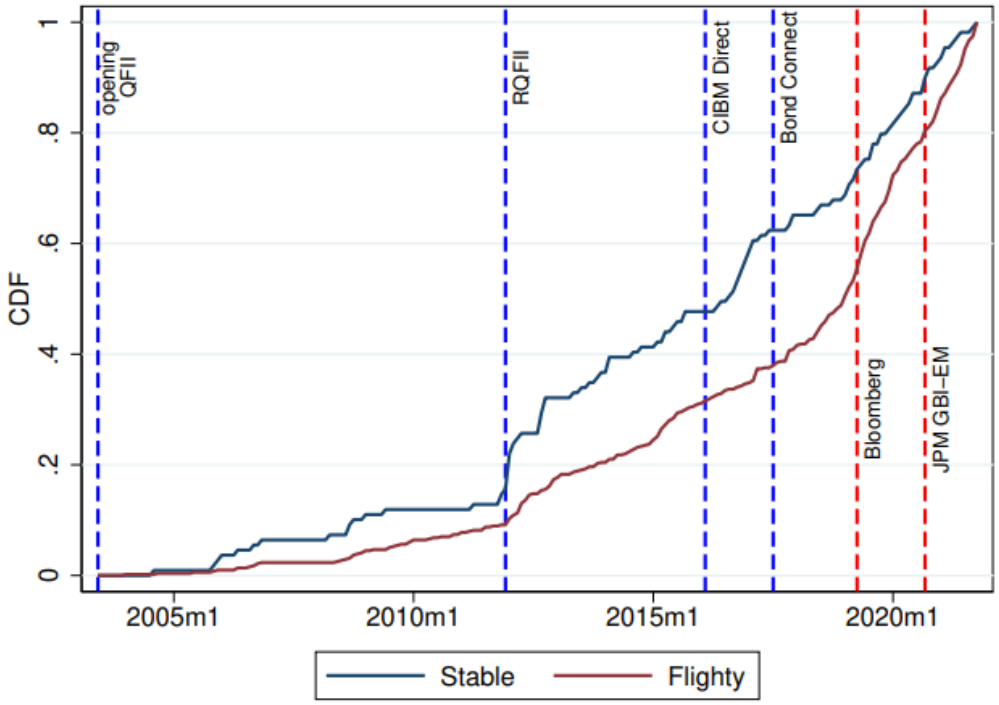
第三阶段：应对金融危机，在固定与浮动间徘徊

- 2008年7月美国金融海啸导致全球金融危机爆发，之后，中国重新将人民币钉住美元，汇率规定为6.83左右
- 2010年6月，中国放弃钉住美元6.83的固定汇率制度，重新回到有管理的浮动汇率制度
- 2012年4月人民币兑美元的汇率波动幅度进一步扩大至±1.0%，2014年该幅度进一步扩大至±2.0%

第四阶段：人民币国际化

- “8.11”汇改：2015年8月11日，人民银行宣布做市商在每日银行间外汇市场开盘前，参考上日银行间外汇市场收盘汇率，综合考虑外汇供求情况以及国际主要货币汇率变化向中国外汇交易中心提供中间价报价
- “8.11”汇改，使得人民币兑美元汇率中间价更能反映外汇市场供求力量变化，参照一篮子货币进行调节，提高了中间价报价的合理性
- 2015年12月1日，IMF正式宣布，人民币获准加入特别提款权（SDR）
- 2016年10月1日，人民币正式加入SDR

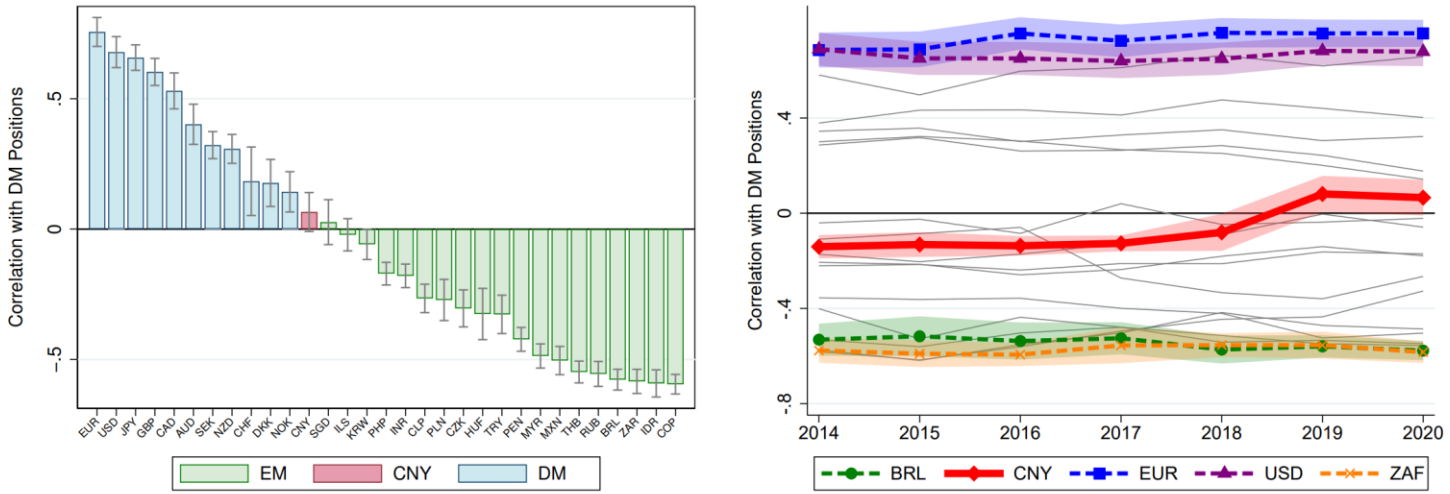
人民币国际化的策略：筛选投资者



Notes: Figure plots the share of each investor type that had entered the market by a given date. The share is expressed as a fraction of investors by type that had entered by 2021.

资料来源：Internationalizing Like China, NBER Working Paper

人民币作为国际货币的“口碑”（reputation）不断提升



(a) Cross-Section of Estimates in 2020　　(b) Time Series

Notes: Figure reports the correlation between the foreign-bond portfolio shares invested in government bonds in each currency and in a reference set of Developed Markets (DM) local-currency government bonds. Panel (a): reports cross-sectional estimates at the end of year 2020. Panel (b): reports time series for selected countries' estimates. Each line, including the ones in gray, corresponds to a specific currency. We label select currencies for ease of comparison. 95% confidence intervals are computed via bootstrapping.

资料来源：Internationalizing Like China, NBER Working Paper

下一节课

- 为什么人民币国际化很重要？
- 它又与中国产业的出海有什么样的关系？
- 下一节课：透过汇率危机，了解储备货币国所具有的特殊权利

谢 谢

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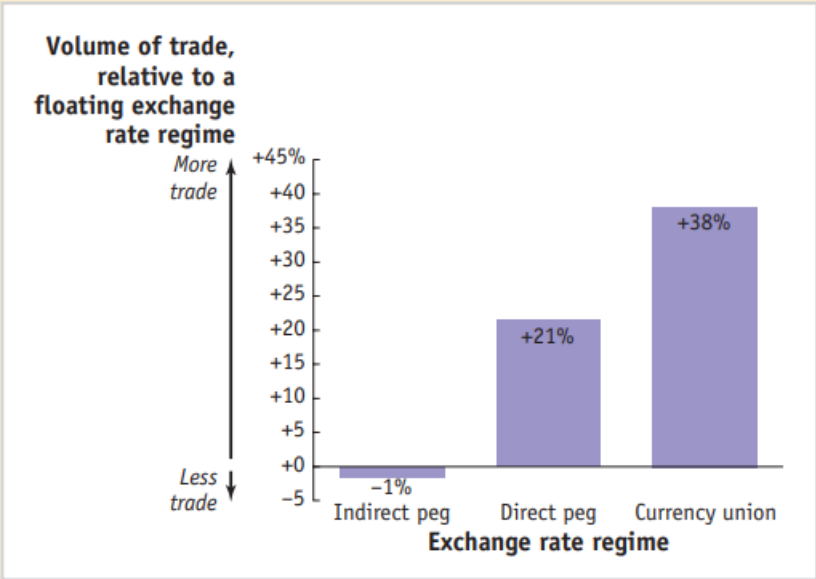
- 2022年毕业于北京大学国家发展研究院，获经济学博士学位，多伦多大学访问学者；主要研究领域为发展经济学、城市经济学与国际经济学；研究主线是中国的区域产业发展与全球市场的关系，中国在全球价值链中的位置，以及中国企业的国际化进程。当前的研究重心为海外华人华商与中国产业发展之间的联系。
- 邮箱：fhchen2017@nsd.pku.edu.cn
- 个人网页：https://fanghaochen.github.io/homepage/

固定汇率促进贸易的实证证据



Do Fixed Exchange Rates Promote Trade?

The chart shows one study's estimates of the impact on trade volumes of various types of fixed exchange rate regimes, relative to a floating exchange rate regime. Indirect pegs were found to have a small but statistically insignificant impact on trade, but trade increased under a direct peg by 21%, and under a currency union by 38%, as compared to floating.

Note: Based on a gravity model of trade with binary controls for each type of exchange rate regime using country-pair fixed effects.

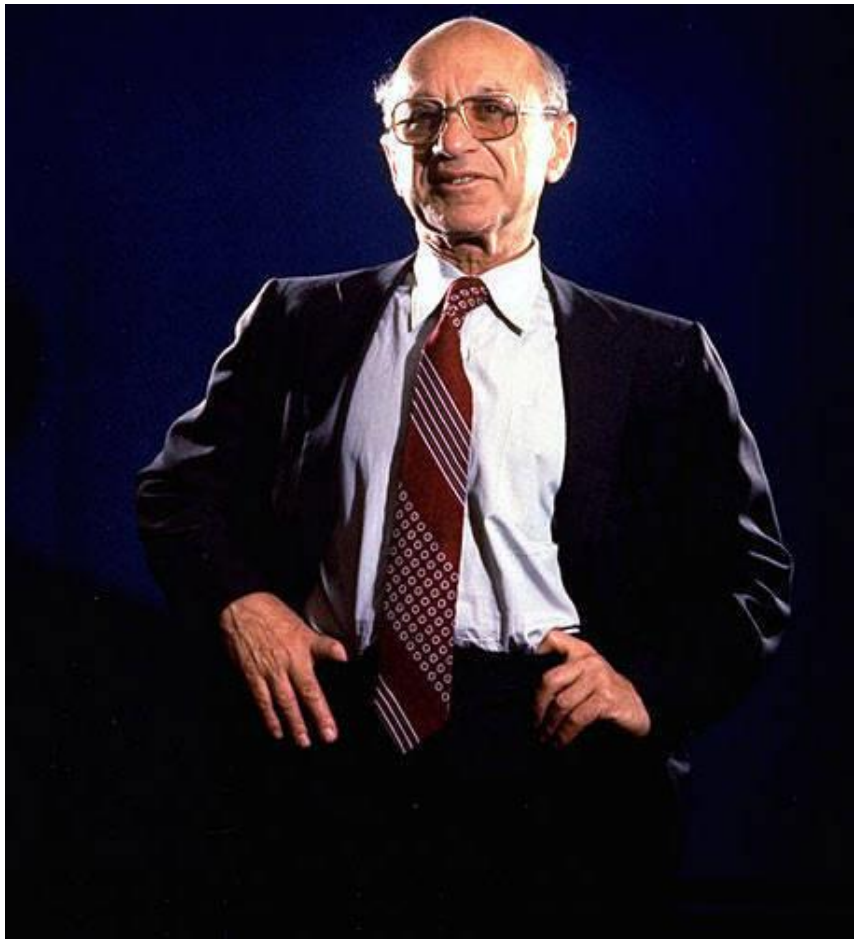
Source: Michael W. Klein and Jay C. Shambaugh, 2006, "Fixed Exchange Rates and Trade," Journal of International Economics, 70(2), 359–383.

全世界的汇率制度采纳情况（2008年）

Increasingly fixed ↑	**No separate legal tender (46 countries)**	*Another currency as legal tender*: East Timor, Ecuador, El Salvador, Kiribati, Marshall Islands, Micronesia, Montenegro, Palau, Panama, San Marino *Eastern Caribbean Currency Union*: Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines *West African CFA Franc Zone*: Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, Togo *Central African CFA Franc Zone*: Cameroon, Central African Rep., Chad, Rep. of Congo, Equatorial Guinea, Gabon *Eurozone*: Austria, Belgium, Cyprus, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Slovenia, Spain
	Currency boards (7)	Bosnia and Herzegovina, Brunei, Bulgaria, Djibouti, Estonia, Hong Kong, Lithuania
	Other fixed pegs (58)	Angola, Argentina, Aruba, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belize, Bhutan, Capre Verde, Comoros, Croatia, Denmark, Eritrea, Fiji, Guyana, Honduras, Jordan, Kazakhstan, Kuwait, Latvia, Lebanon, Lesotho, Libya, Macedonia, Malawi, Maldives, Mongolia, Morocco, Namibia, Nepal, Netherlands Antillies, Oman, Qatar, Russia, Rwanda, Samoa, Saudi Arabia, Seychelles, Sierra Leone, Solomon Islands, Sri Lanka, Suriname, Swaziland, Tajikistan, Trinidad and Tobago, Tunisia, Turkmenistan, United Arab Emirates, Venezuela, Vietnam, Yemen, Zimbabwe
	Pegged within horizontal bands (2)	Syria, Tonga
	Crawling pegs (8)	Bolivia, Botswana, China, Ethiopia, Iran, Iraq, Nicaragua, Uzbekistan
	Crawling bands (2)	Azerbaijan, Costa Rica
Increasingly floating ↓	**Managed floating with no predetermined path for the exchange rate (44)**	Afghanistan, Algeria, Armenia, Bangladesh, Burundi, Cambodia, Colombia, Dominican Rep., Egypt, Gambia, Georgia, Ghana, Guatemala, Guinea, Haiti, India, Indonesia, Jamaica, Kenya, Kyrgyzstan, Laos, Liberia, Madagascar, Malaysia, Mauritania, Mauritius, Moldova, Mozambique, Myanmar, Nigeria, Pakistan, Papua New Guinea, Paraguay, Peru, Romania, São Tomé and Príncipe, Serbia, Singapore, Sudan, Tanzania, Thailand, Uganda, Ukraine, Uruguay, Vanuatu
	Independently floating (25)	Albania, Australia, Brazil, Canada, Chile, Czech Rep. Dem. Rep. of Congo, Hungary, Iceland, Israel, Japan, Mexico, New Zealand, Norway, Philippines, Poland, Somalia, South Africa, South Korea, Sweden, Switzerland, Turkey, United Kingdom, United States, Zambia

1890年代起的美国通缩：金本位是罪魁祸首

- 1. 金本位能够以看不見的、没有征兆的、类似自动的方式产生一种对货币的调节，这种调节带有可预見性和規律性，要比审慎的，有意的制度安排能更好地促使货币稳定。这是一个表面現象具有迷惑性的典型例子，表面現象下往往运行着不为表象所反映的支配力量。
- 2.货币存量变化率与经济周期的时间关系在以后的实践中得到印证……货币存量的谷底经常与经济周期谷底重合，比如1933年的大萧条。
- ——米尔顿·弗里德曼（Milton Friedman），《美国货币史》



白银外流——中华帝国晚期衰败的隐秘线索

- 1.清政府的白银供应，无论是银元还是银两，都依赖商人……中国不存在货币主权的概念……在东亚中，唯独中国因大量使用拉美白银而深深依赖于更广阔的世界经济。
- 2. 世界对中国的白银供应在1820-1850年间急剧下降……受拉美国家独立运动的影响，直到1850年代早期全球白银供应才恢复到有余裕供应印度和中国。
- ——林满红，《银线：19世纪的世界与中国》

恶性通货膨胀：
德国魏玛共和国时期德国小孩拿纸币当玩具

人民币国际化的测算方法

universe of mutual funds and ETFs. More formally, for each fund i and currency c, we compute the share of the foreign-currency bond portfolio in that currency:

$$\alpha_{c,i} = \frac{\sum_{b \in B_c} \text{MV}_{b,i}}{\sum_{c \in FC_i} \sum_{b \in B_c} \text{MV}_{b,i}},$$

where $\text{MV}_{b,i}$ is the market value of holdings (measured in USD) that fund i has in bond b, B_c denotes the set of bonds denominated in currency c, and FC_i the super-set of bonds in foreign currency from the perspective of fund i. The denominator, therefore, is the value of holdings of foreign currency bonds by fund i. In addition, for each fund i and currency c we compute the share of the remaining foreign-currency bond portfolio in DM currencies as

$$\alpha_{DM,c,i} = \frac{\sum_{d \in \{DM_i/c\}} \alpha_{d,i}}{(1 - \alpha_{c,i})}.$$

We exclude currency c if it is a developed currency, so that $\{DM_i/c\}$ is the set of developed currencies excluding c. We re-scale shares by $(1 - \alpha_{c,i})^{-1}$ so that they reflect the composition of the remaining portfolio excluding currency c.[41] Finally, we compute the summary statistic of interest: the correlation across funds of the share invested in currency c and the remaining share invested in (other) developed currencies

$$\rho_{c,DM} = corr_i \left(\alpha_{c,i} \, , \alpha_{DM,c,i} \right), \tag{26}$$