

## Macroeconomics · 2025-26 · Problem set 2

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### 1. Explain if the following statements are true or false

1. A fall in the mandatory reserves ratio represents a contractionary monetary policy.
2. A rise in the mandatory reserves ratio represents an expansionary fiscal policy.
3. A rise in the mandatory reserves ratio represents a contractionary fiscal policy.
4. A fall in the mandatory reserves ratio does not represent a contractionary fiscal policy.
5. Altering the mandatory reserves ratio is an exchange rate policy measure.
6. In a fixed exchange rate regime, an increase in transfers represents an expansionary fiscal policy, whereas in a flexible exchange rate regime it represents a contractionary fiscal policy.
7. Open market operations contribute to reduce the inflation rate.
8. In a fixed exchange rate regime, the central bank controls the exchange rate by means of open market operations.
9. Under financial integration (or 'perfect capital mobility') and a fixed exchange rate regime, an expansionary fiscal policy is not more effective to increase GDP than an expansionary monetary policy.
10. According to the open economy trilemma, having an independent monetary policy under a fixed exchange rate regime implies that the economy has to be financially integrated with the rest of the world.
11. According to the open economy trilemma, having an independent monetary policy under a fixed exchange rate regime implies that the economy has to be financially integrated at least with the economy having the currency with which the domestic currency is fixed.
12. A fiscal policy has the same effect on GDP with fixed exchange rates as with flexible exchange rates.
13. Under a fixed exchange rate regime with financial integration a contractionary monetary policy can modify GDP but not an expansionary monetary policy.
14. Under a fixed exchange rate regime with financial integration a contractionary monetary policy cannot modify GDP but a contractionary fiscal policy can.
15. Under a flexible exchange rate regime a contractionary monetary policy combined with an expansionary fiscal policy does not modify GDP.
16. Under a fixed exchange rate regime with financial integration an expansionary monetary policy combined with a devaluation can modify GDP.
17. Under a fixed exchange rate regime with financial integration an expansionary monetary policy combined with a revaluation cannot modify GDP.
18. GDP has increased. It is not a possible explanation is that the exchange rate is fixed, mobility of capital is perfect and the central bank has conducted an expansionary monetary policy.

19. GDP has decreased. It is not a possible explanation is that the exchange rate is flexible and the government has implemented a contractionary fiscal policy and the central bank has conducted an expansionary monetary policy.
20. GDP has decreased. A possible explanation is that the exchange rate is flexible and the government has implemented an expansionary fiscal policy.
21. GDP has decreased. A possible explanation is that the exchange rate is fixed and the central bank has conducted a contractionary monetary policy.
22. An increase in transfers combined with an expansionary open market operation lowers GDP.
23. An increase in transfers combined with an expansionary open market operation lowers GDP only under a fixed exchange rate regime.
24. An increase in transfers combined with an expansionary open market operation lowers GDP only under a flexible exchange rate regime.
25. Lowering the mandatory reserves ratio is a more expansionary monetary policy than an expansionary open market operation.
26. Lowering the mandatory reserves ratio can only be an expansionary monetary policy under a flexible exchange rate regime.
27. Tax rate cuts are always a more expansionary fiscal policy than public expenditure increases.
28. There is no crowding out effect (of an increase in public expenditure) when the exchange rate is flexible.
29. If an increase in public expenditure crowds out (reduces) private investment, then a reduction in public expenditure must crowd in (rise) private investment.
30. Assuming that, in the long run, GDP equals a fixed value (potential GDP), implies that, in the long run, an expansionary fiscal policy is ineffective (does not alter aggregate demand).
31. Assuming that, in the long run, GDP equals a fixed value (potential GDP), implies that a contractionary fiscal policy is, in the long run, actually expansionary (the initial fall in aggregate demand eventually becomes an increase).
32. A contractionary monetary policy reduces private investment.
33. An expansionary fiscal policy increases private consumption.
34. Suppose that, in the long run, GDP equals a fixed value (potential GDP). Suppose that the central bank controls the amount of money. Then a fall in public expenditure causes, in the long run, a rise in private investment.
35. Suppose that, in the long run, GDP equals a fixed value (potential GDP). Suppose that the central bank controls the amount of money. Then a fall in public expenditure causes, in the long run, no effect on private consumption.
36. Suppose that, in the long run, GDP equals a fixed value (potential GDP). Suppose that the central bank controls the interest rate. Then a fall in public expenditure causes, in the long run, no effect in private investment.
37. The money multiplier could be calculated knowing the reserve ratio and cash.

38. The money multiplier cannot be calculated knowing the reserve ratio, cash and deposits.
39. With the money multiplier constant, it is possible for M1 to rise even if M0 does not change.
40. The money multiplier falls when the liquidity ratio increases.
41. The money multiplier remains constant if the liquidity ratio goes up and the reserve ratio goes down.
42. An expansionary monetary policy expands the monetary base.
43. An expansionary monetary policy does not reduce the interest rate.
44. A monetary base expansion is equivalent to an expansionary monetary policy.
45. An open market operation increases the monetary base.
46. An open market operation increases the money multiplier.
47. An expansionary open market operation increases the money multiplier.
48. An expansionary open market operation decreases the money multiplier.
49. An expansionary open market operation decreases the interest rate.
50. An expansionary fiscal policy increases the interest rate.
51. An expansionary fiscal policy decreases aggregate demand.
52. Expansionary demand side policies increase aggregate demand.
53. In the short run, by increasing aggregate demand, GDP is also increased.
54. Stagflation means, roughly speaking, that the inflation rate goes up and GDP goes down (or at least does not increase).
55. A contractionary fiscal policy causes stagflation.
56. A contractionary monetary policy does not cause stagflation.
57. A stagflation can be neutralized by means of an expansionary monetary policy.
58. A stagflation cannot be neutralized by means of an expansionary fiscal policy.
59. To neutralize a stagflation both an expansionary monetary policy and an expansionary fiscal policy are needed.
60. A revaluation causes stagflation.
61. A devaluation always follows a stagflation.
62. A devaluation can neutralize a stagflation.
63. A revaluation cannot neutralize a stagflation.
64. GDP has increased. It is not a possible explanation that public expenditure has diminished.
65. GDP has increased. A possible explanation is that public deficit has increased.
66. GDP has increased. A possible explanation is that the central bank conducted an expansionary monetary policy.
67. An expansionary fiscal policy can cause a rise in public deficit.
68. An expansionary fiscal policy can cause a rise in net exports.

69. A depreciation reduces net exports.
70. An increase in net exports reduces aggregate demand.
71. In the 45-degree model, an increase in public expenditure lowers GDP.
72. In the 45-degree model, an increase in the interest rate rises GDP.
73. GDP has decreased in the 45-degree model. A possible explanation is a contractionary fiscal policy.
74. GDP has decreased in the 45-degree model. A possible explanation is a reduction in autonomous consumption.
75. GDP has decreased in the 45-degree model. It is not a possible explanation that transfers have duplicated.
76. GDP has decreased in the 45-degree model. It is not a possible explanation that the tax rate has decreased.
77. The multiplier effect of an increase in public expenditure depends positively on the propensity to consume (the higher the propensity, the larger the effect).
78. The multiplier effect of an increase in autonomous expenditure depends negatively on the propensity to save (the higher the propensity, the smaller the effect).
79. The multiplier effect of an increase in autonomous private investment depends negatively on the tax rate.
80. The multiplier effect of an increase in autonomous private consumption depends positively on the tax rate.
81. In the 45-degree model, as GDP approaches its equilibrium value, the gap (in absolute terms) between GDP and aggregate demand decreases.
82. An expansionary fiscal policy may reduce disposable income.
83. GDP has decreased and the interest rate has increased. A possible explanation is that the central bank has conducted a contractionary monetary policy and, simultaneously, the government has implemented an expansionary fiscal policy.
84. GDP and the interest rate have both increased. A contractionary monetary policy combined with an expansionary fiscal policy could not explain that outcome.
85. In the IS-LM model, if GDP has changed, then necessarily the IS relation has shifted.
86. In the IS-LM model, GDP may fall without altering the LM relation.
87. In the IS-LM model, if both the IS and the LM relations change, then the interest rate must necessarily change as well.
88. In the IS-LM model, if both the IS and the LM relations change, then GDP must necessarily change as well.
89. More deposits means a larger monetary base.
90. More cash means a larger monetary base.
91. A change in the reserve ratio implies a change in the monetary base.

92. Banks change the monetary base when they grant loans to consumers.
93. Banks create monetary base when they create bank money.
94. Banks create money stock (or money supply or monetary mass) base when they create bank money.
95. Deposits can be created, but not destroyed.
96. There are only two ways of conducting an expansionary monetary policy: by lowering the interest rate (or rates) set by the central bank and by lowering the mandatory reserves ratio.
97. The central bank cannot modify the monetary base by purchasing or selling financial assets.
98. A depreciation cannot be explained by a fall in the domestic interest rate.
99. An appreciation cannot be explained by a rise in the foreign interest rate.
100. A depreciation can be explained by a rise in the domestic inflation rate.
101. An appreciation can be explained by a fall in the foreign inflation rate.
102. The domestic currency has appreciated. A possible explanation is that foreign GDP has risen and, simultaneously, domestic GDP has fallen.
103. In passing from 2 \$/€ to 2 €/ \$ the euro is revalued.
104. The purchasing power parity exchange rate is always equal to one.
105. If domestic prices and foreign prices are the same, then the purchasing power parity exchange rate is one.
106. If domestic prices double foreign prices and the market exchange rate is 1 \$/€, then the euro is undervalued against the dollar with respect to its purchasing power parity value.
107. In the IS-LM model when the central bank chooses the monetary base, a fall in the interest rate and a rise in GDP is consistent with having increased the monetary base.
108. In the IS-LM model when the central bank chooses the monetary base, a fall in both the interest rate and GDP is consistent with having reduced the monetary base.
109. In the IS-LM model when the central bank chooses the monetary base, the effect on GDP of combining an expansionary fiscal policy with a contractionary monetary policy is uncertain.
110. In the IS-LM model when the central bank chooses the monetary base, the effect on the interest rate of combining an expansionary fiscal policy with a contractionary monetary policy is uncertain.
111. A public expenditure cut reduces aggregate demand but increases aggregate supply.
112. Increasing transfers increases aggregate demand but reduces aggregate supply.
113. Changes in the tax rate do not affect aggregate supply.
114. A contractionary fiscal policy contracts aggregate demand or aggregate supply.
115. An expansionary monetary policy expands both aggregate demand and aggregate supply.
116. Monetary policy is a demand-side policy, whereas fiscal policy is a supply-side policy.

117. If GDP is at its potential (or long run) level, then expansionary demand-side policies increase the inflation rate, but not GDP.
118. Inflation reduces the purchasing power of (nominal or monetary) wages.
119. If GDP is at its potential (or long run) level, then an expansionary monetary policy cannot increase private consumption.
120. If GDP is at its potential (or long run) level, then a contractionary monetary policy cannot lower the inflation rate.
121. The propensity to consume influences the expenditure multiplier, GDP and the propensity to save, but is unrelated to disposable income.
122. The tax rate influences the expenditure multiplier, GDP and disposable income, but is unrelated to the propensity to save.
123. Transfers affect disposable income, consumption and GDP, but not the expenditure multiplier nor the propensity to consume.
124. Okun's law is the inverse of the Phillips curve.
125. The Phillips curve postulates an inverse relationship between GDP growth and the inflation rate.
126. Okun's law does not postulate an inverse relationship between the unemployment rate and the inflation rate.
127. Expansionary fiscal policies always invalidate the Phillips curve existing before the policies.
128. When the central bank sets the interest rate, the LM relation in the IS-LM model is represented by a horizontal line.
129. When the central bank sets the interest rate, the LM relation in the IS-LM model is represented by a decreasing line: with more money the interest rate is smaller.
130. The IS relation in the IS-LM model is downward sloping because the interest rate affects negatively private investment.
131. The IS relation in the IS-LM model is downward sloping because a rise in the interest rate depreciates the domestic currency.
132. The IS relation in the IS-LM model is downward sloping because to increase GDP it is necessary to increase aggregate demand, and to increase aggregate demand by altering the interest rate an interest rate cut is necessary.
133. The IS relation in the IS-LM model would be a vertical line if aggregate demand were independent of the interest rate.
134. This list contains at least two variables not present in the definition of the money multiplier: liquidity ratio, M1, tax rate, interest rate.
135. The reserve ratio affects the money multiplier, but less than the unemployment rate and more than the exchange rate.
136. Rising production costs over the whole economy can generate stagflation.

137. Tariffs over imports can generate domestic stagflation.
138. All financial assets in an economy are forms of money.
139. Reserves are a liability of both banks and the central bank.
140. The difference between money and financial assets is that all financial assets are a form of money but not all forms of money are financial assets.
141. It does not destroy deposits that a bank customer makes a cash withdrawal from the bank.
142. Open market operations are the only way banks can obtain reserves from the central bank.
143. If **M0** does not change, the amount of cash is reduced and the reserve ratio increases, then deposits have decreased.
144. If the difference between **M1** and **M0** increases, then cash has decreased.
145. A worker, with a liquidity coefficient of  $\frac{1}{4}$ , has received a deposit as salary. Then the worker received a deposit of 1200 if he has withdrawn cash worth 240.
146. The liquidity ratio is the inverse of the reserve ratio: when one increases, the other decreases.
147. In at least two of the following four situations the dollar depreciates against the euro: from 4 \$/€ to 2 €/€ ; from 2 \$/€ to 2 €/€; from 2 €/€ to 0.5 \$/€; from 2 €/€ to 4 \$/€.
148. Depreciation and devaluation differ in that depreciation is a reduction in the exchange rate and devaluation is an increase.
149. Appreciation and revaluation differ in that appreciation is a decision by a public authority and revaluation is determined by the foreign exchange market.
150. The dollar appreciates against the euro going from 2 \$/€ to 4 \$/€.
151. The dollar does not appreciate against the euro going from 2 \$/€ to 2 €/€.
152. The dollar depreciates against the euro going from 2 \$/€ to  $\frac{1}{2}$  €/€.
153. The change from 2 \$/€ to 2 €/€ does not mean that the euro is not depreciating against the dollar.
154. In the euro-dollar foreign exchange market, anyone who buys euros is, at the same time, creating demand for dollars.
155. In a fixed exchange rate system the domestic currency neither appreciates nor depreciates.
156. In a fixed exchange rate system the impossible trinity becomes possible.
157. According to the open economy trilemma, it is not possible to have a high interest rate, a low exchange rate and stable GDP growth at the same time.
158. According to the open economy trilemma, it is not possible to have an expansionary open market operation, a declining reserve ratio and a fixed exchange rate at the same time.
159. The open economy trilemma relates monetary policy, fixed exchange rates and capital controls.
160. If the market exchange rate \$/€ is higher than the fixed exchange rate, the central bank can make them match by selling enough dollars in the currency market.

161. The connection between interest rate and exchange rate in the very short term implies that a domestic expansionary monetary policy will tend to depreciate the domestic currency.
162. Among the factors that contribute to the demand for euros in the currency market are imports of US goods made by euro area producers.
163. Among the factors that contribute to the supply of euros in the currency market are the sales of financial assets from euro area residents to US residents.
164. If euro area citizens make more tourist visits to the US, the dollar tends to depreciate against the euro.
165. An increase in the euro area interest rate combined with a rise in the US interest rate necessarily causes an appreciation of the euro against the dollar.
166. A decline in the euro area inflation rate combined with a reduction in the US inflation rate necessarily causes an appreciation of the dollar against the euro.
167. The difference between arbitrage and speculation is that the latter takes place when the exchange rate is fixed and the former when it is flexible.
168. A reason that would explain the appreciation of the dollar against the euro is that the euro area CPI has grown less than the US CPI.
169. In the currency market where euros are exchanged for dollars, US imports of euro area goods generate a demand for euros, but US purchases of eurozone financial assets generate a demand for dollars (that is, a supply of euros).

## 2. Interpret the following vignettes/cartoons

(source of the vignettes: <https://cagle.com/topic/trump-economy>)

1



"TRUMP GASLIGHTING ISN'T WHAT IT USED TO BE."

2



3



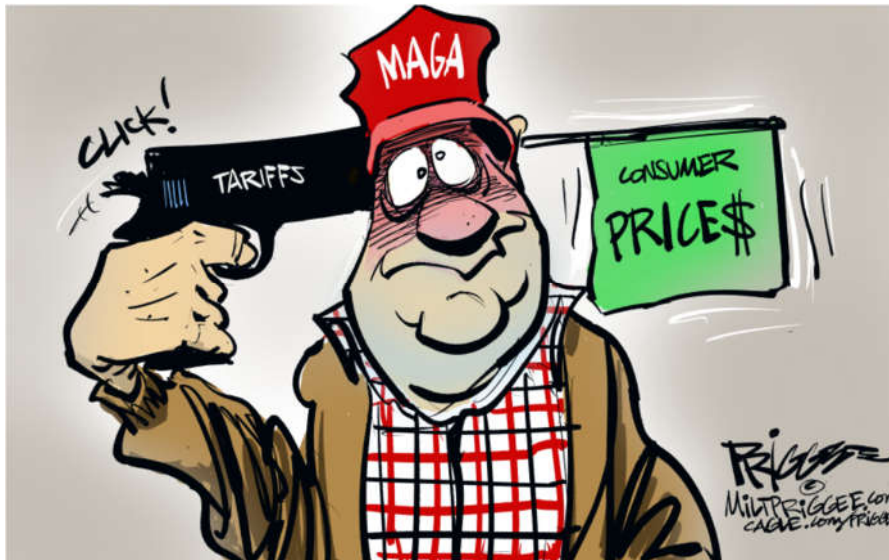
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## Context for the vignettes/cartoons

“American consumers aren’t feeling great about the economy or their own financial situation, with the phrase ‘affordability crisis’ dominating headlines and political campaigns over the last few months. The majority —70%— of Americans surveyed in a Marist poll of over 1,400 adults taken in December, say that the cost of living in their area is not very affordable, or not affordable at all, for the average family (...) While annual inflation is down from the historic highs the U.S. saw in 2022, prices for everyday essentials remain elevated, and in some categories continue to rise.”

“Housing costs rose over 14% between September 2023 and September 2025, per Bureau of Labor Statistics data. Medical costs are up nearly 7% over the same period, and costs for services are up over 8%. While some of those price increases are related to supply issues, Trump’s tariff agenda has also pushed prices on essentials like bananas and coffee and discretionary items like toys and electronics. ‘It’s not like people are overspending,’ Joey Khoury, partner and senior wealth advisor at Mission Wealth, says. Middle and lower-earners especially aren’t ‘spending lavishly,’ he adds, but as living costs have risen it’s become harder for them to stay within their normal budgets.”

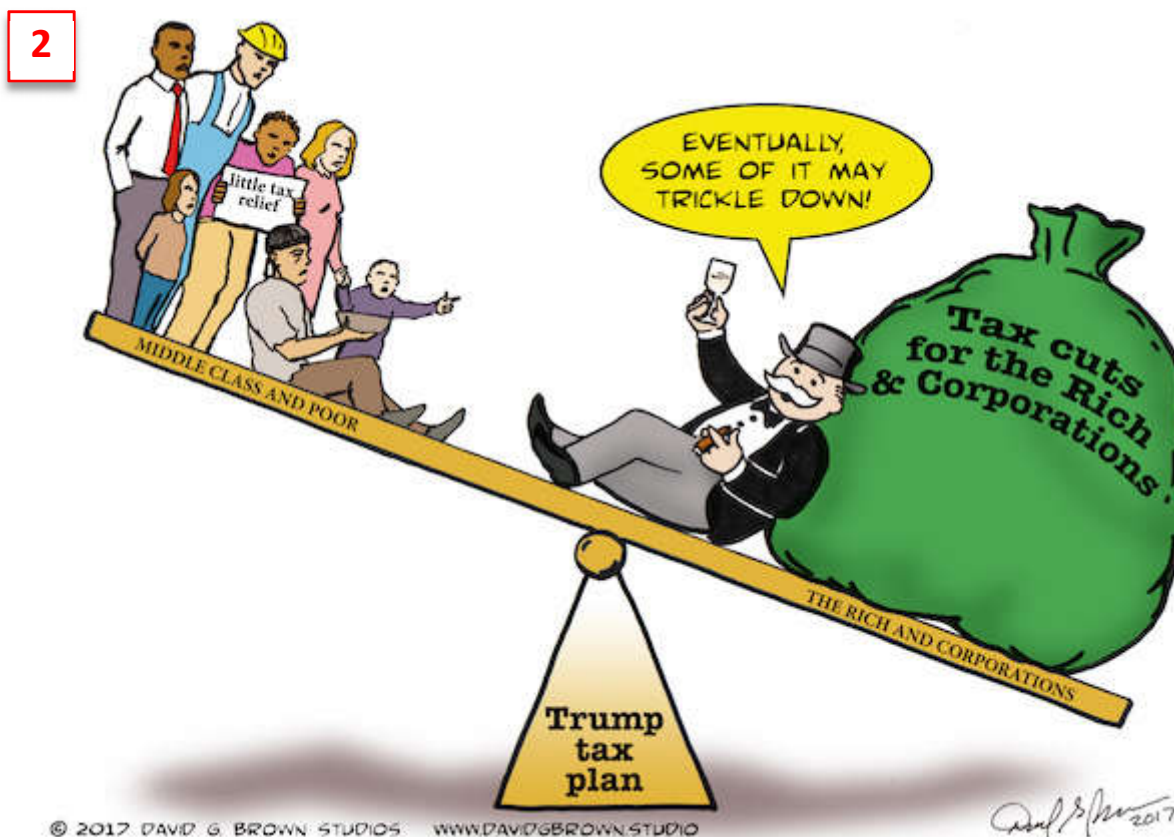
“... many consumers are also relying on credit cards and buy now, pay later (BNPL) loans to fund their purchases. Credit card debt rose to a collective \$1.23 trillion in the U.S. as of the third quarter of 2025, according to New York Fed data. And a growing number of Americans say they’re using BNPL plans to pay for groceries, a LendingTree survey found in April. ‘Consumers are borrowing more and more to cover the spending challenges they’ve got, and that obviously can’t go on forever,’ Auchincloss says.”

<https://www.cnbc.com/2025/12/26/how-americans-are-responding-to-the-affordability-crisis.html>

3. Interpret the next vignettes/cartoons and relate them with contents of the course



<https://www.sgytribune.com/2021/10/18/the-supply-chain-political-cartoons/>



<https://lasentinel.net/editorial-cartoon-trumps-tax-plan.html>



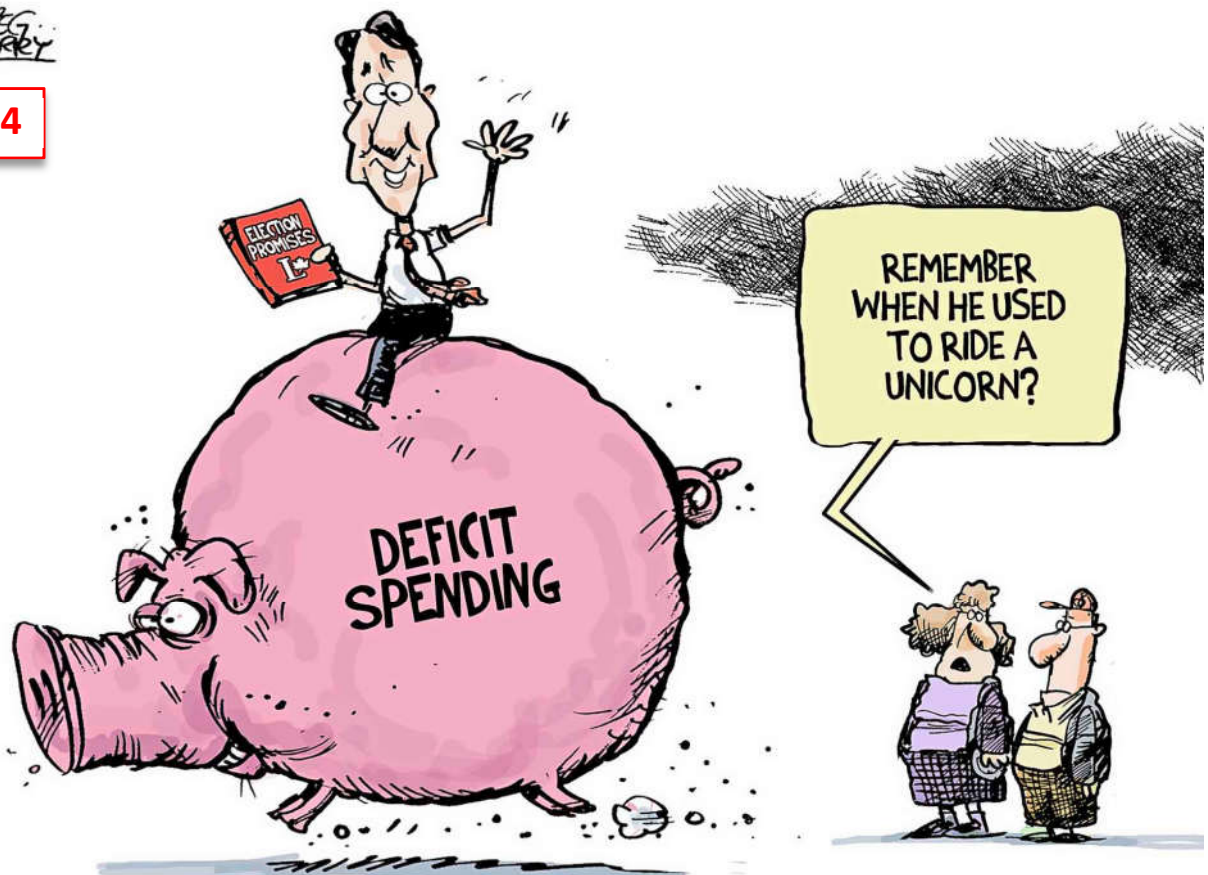
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<https://blog.education.nationalgeographic.org/2013/02/04/exploring-earth-at-night/>

[https://www.researchgate.net/figure/Satellite-of-view-of-the-earth-at-night-showing-light-pollution-Image-courtesy-NASA\\_fig2\\_330167679](https://www.researchgate.net/figure/Satellite-of-view-of-the-earth-at-night-showing-light-pollution-Image-courtesy-NASA_fig2_330167679)

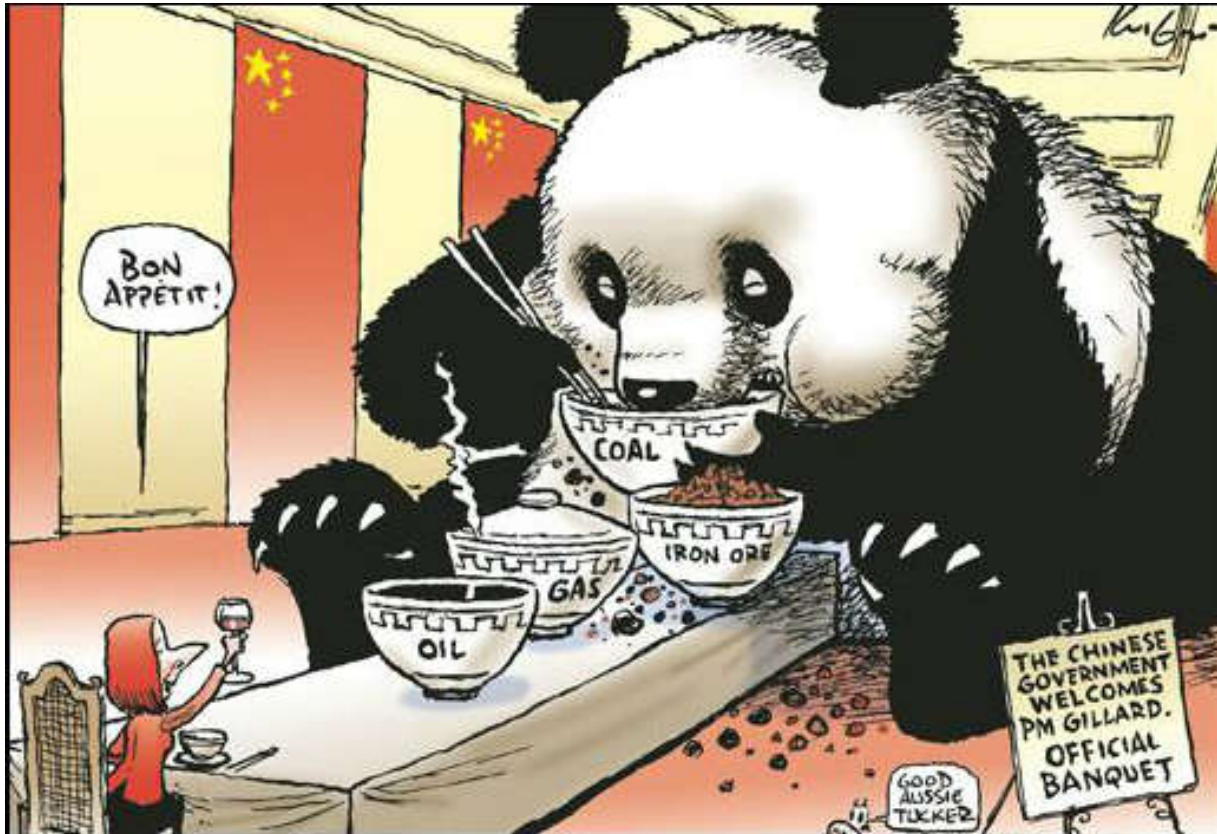
Greg Peckey

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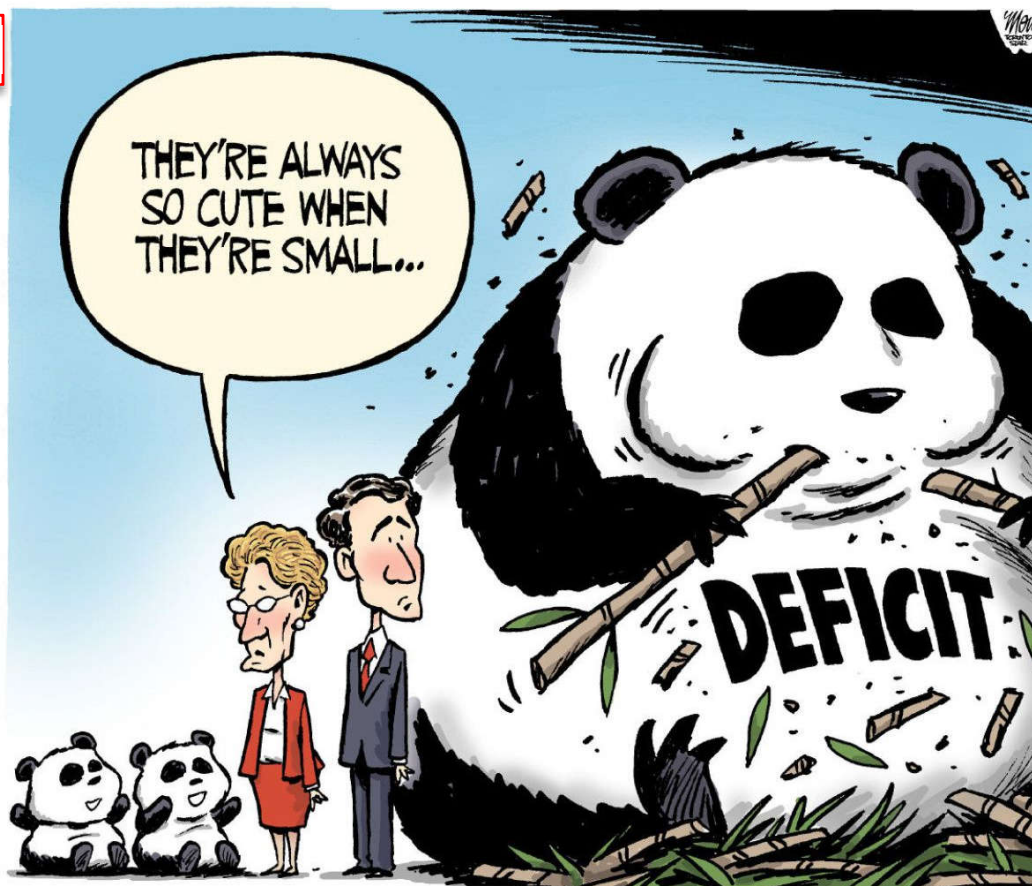
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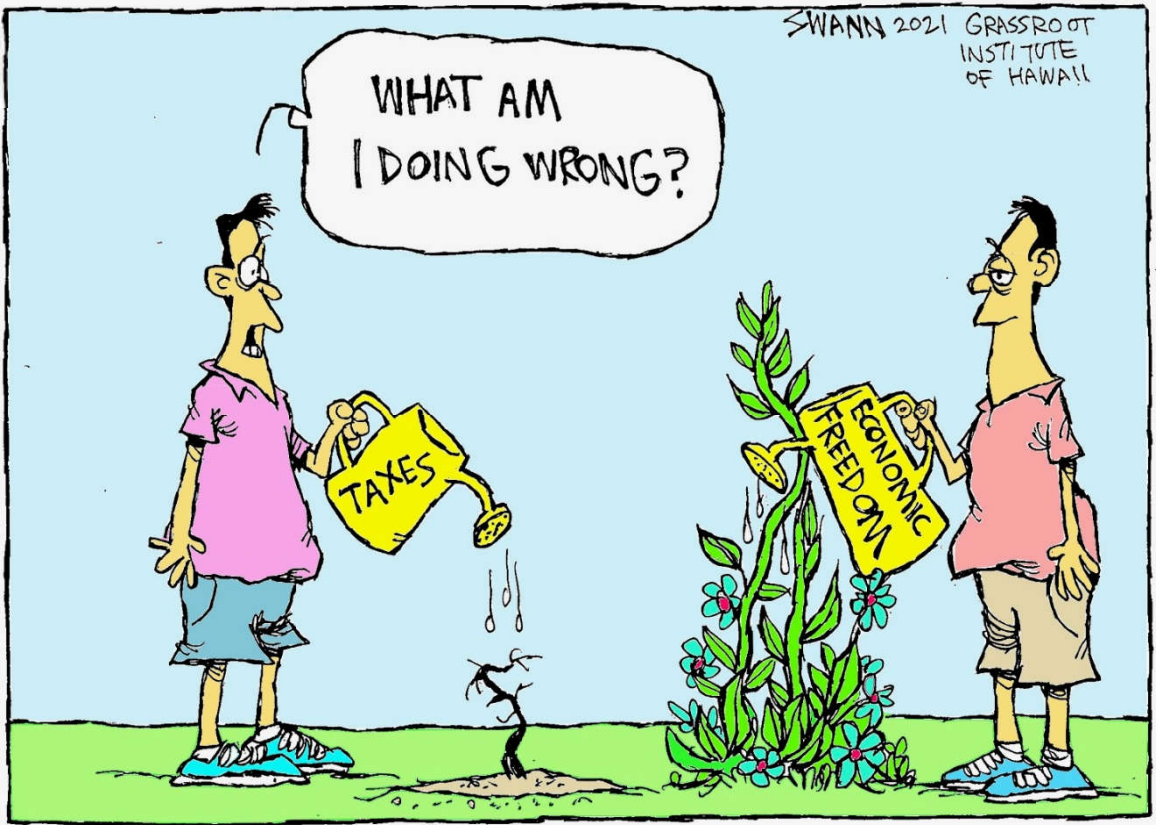
<https://michellefong-economics-scrapbook.weebly.com/three.html>

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[https://www.thestar.com/opinion/editorial\\_cartoon/2016/03/07/theo-moudakis-deficit-panda.html](https://www.thestar.com/opinion/editorial_cartoon/2016/03/07/theo-moudakis-deficit-panda.html)

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<https://www.grassrootinstitute.org/2021/01/how-to-rescue-hawaiis-economy-without-raising-taxes/>

8



[https://tulsaworld.com/opinion/columnists/cartoon-inflation-goes-shopping/article\\_3b6cc842-466e-11ec-9c34-2be7536d1966.html](https://tulsaworld.com/opinion/columnists/cartoon-inflation-goes-shopping/article_3b6cc842-466e-11ec-9c34-2be7536d1966.html)

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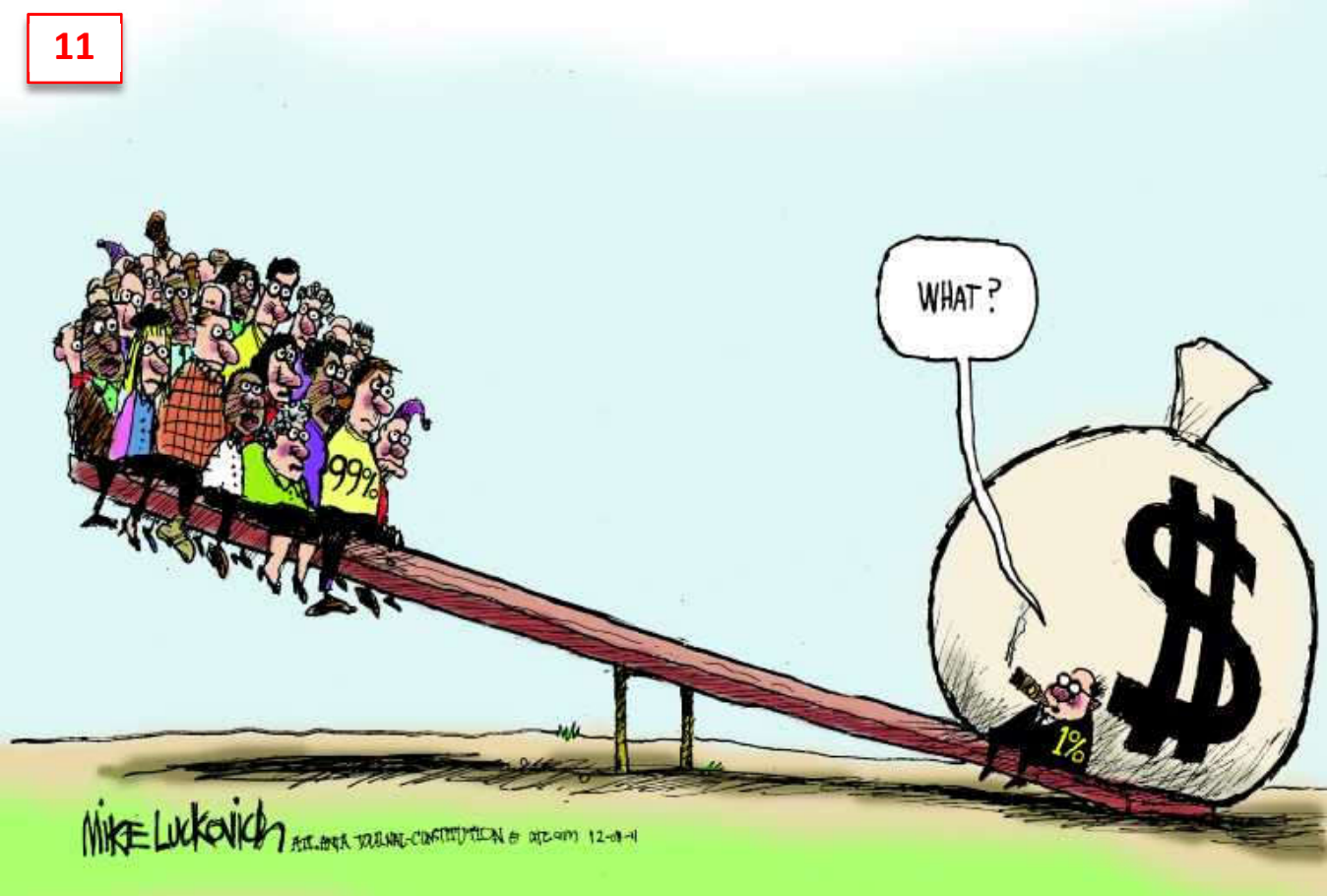
<https://theweek.com/culture/1007099/5-shockingly-funny-cartoons-about-growing-inflation-fears>

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<https://theweek.com/culture/1007099/5-shockingly-funny-cartoons-about-growing-inflation-fears>

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<https://thecomixnews.com/edtoons/2011/1214/economy/01.php>

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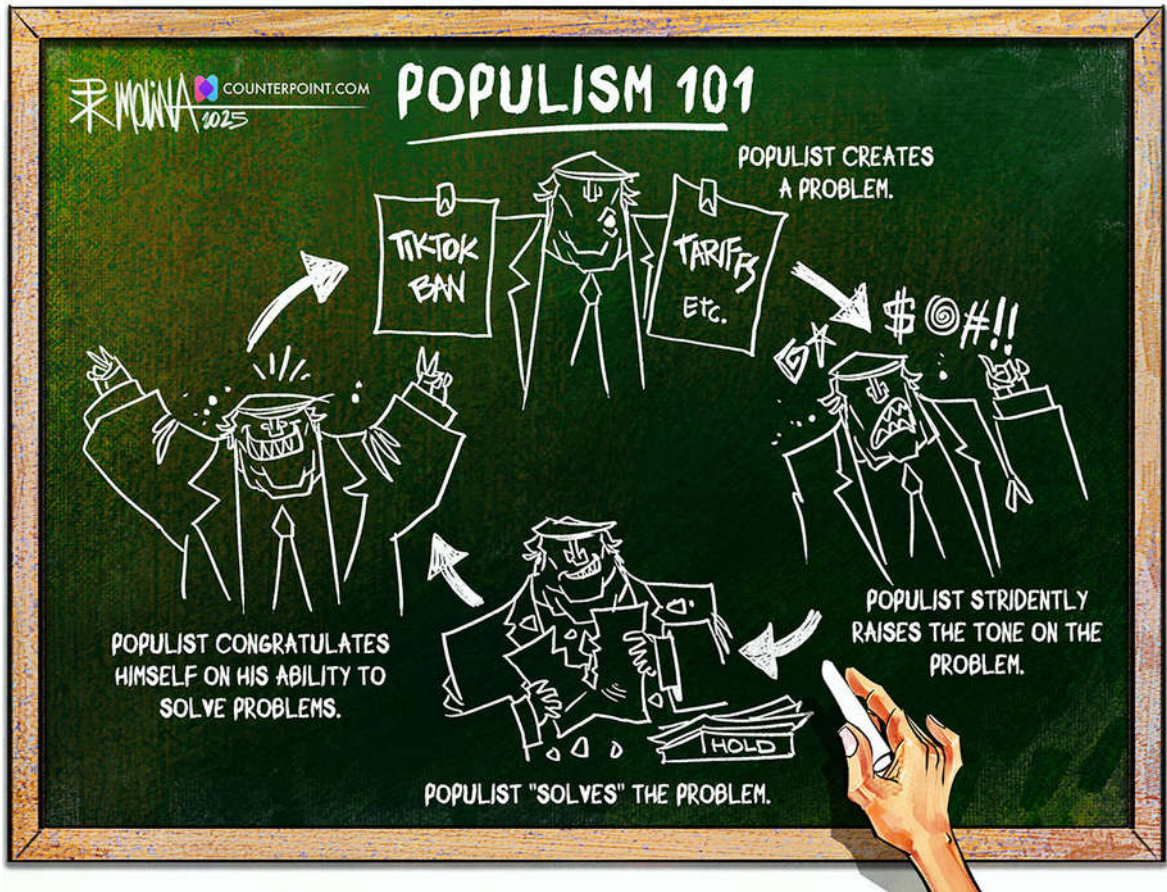


<https://www.economist.com/the-world-this-week/2025/01/30/the-weekly-cartoon>



<https://www.politico.com/gallery/2025/02/07/the-nations-cartoonists-on-the-week-in-politics-00203015?slide=7>

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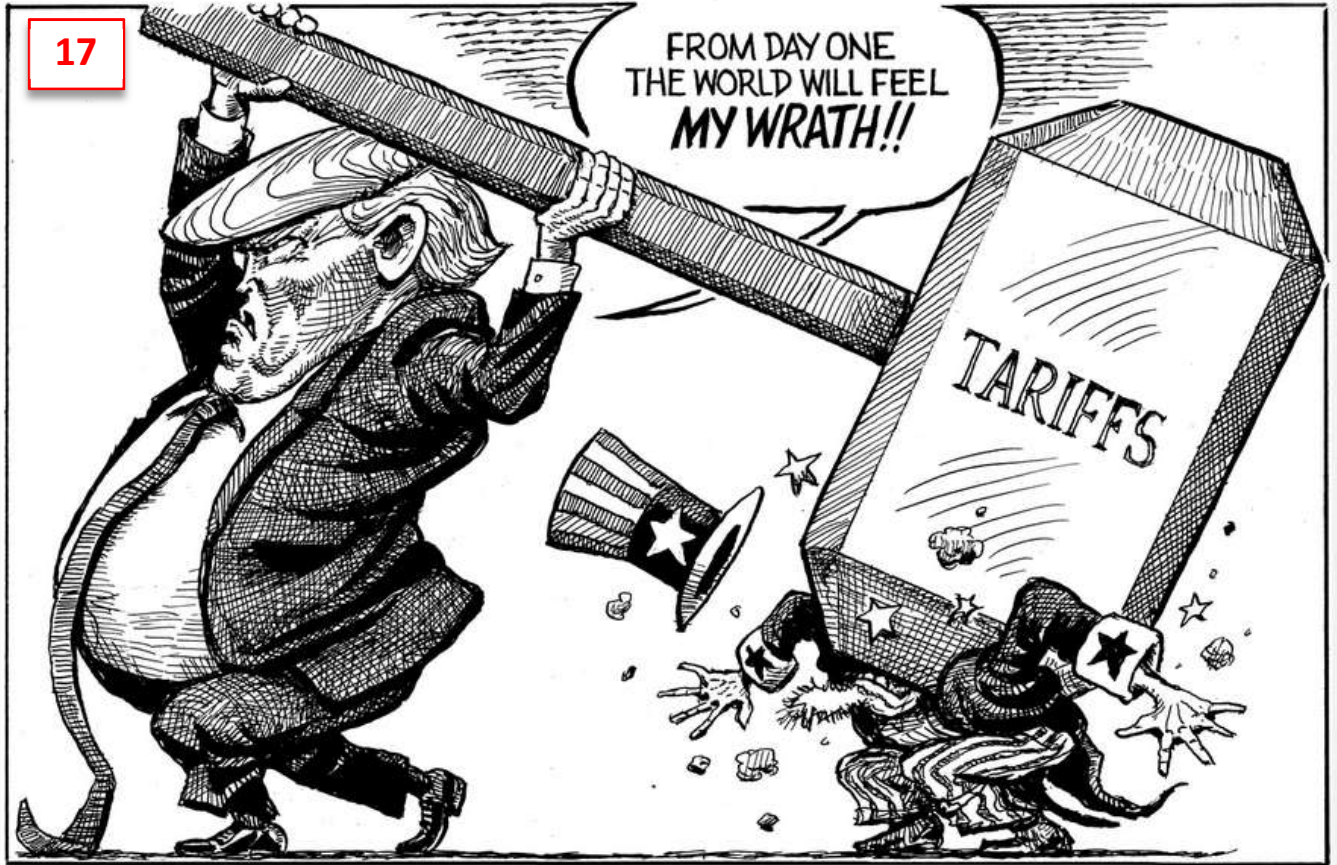


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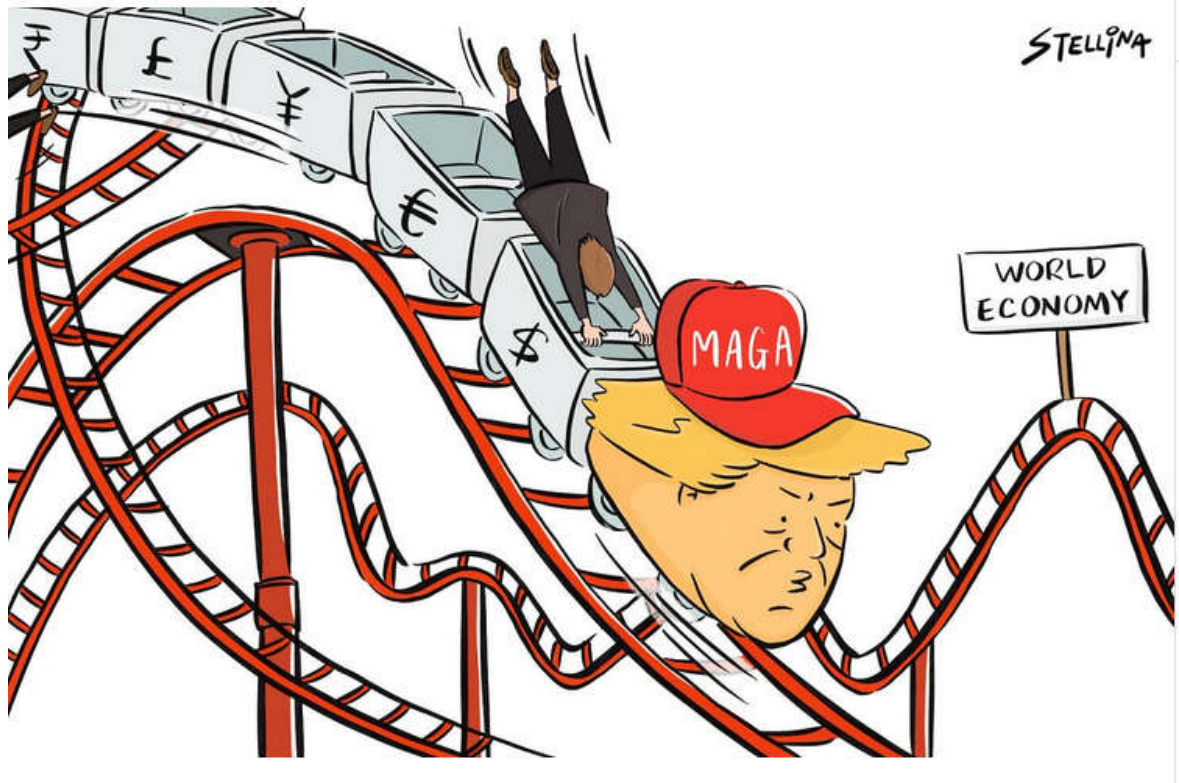
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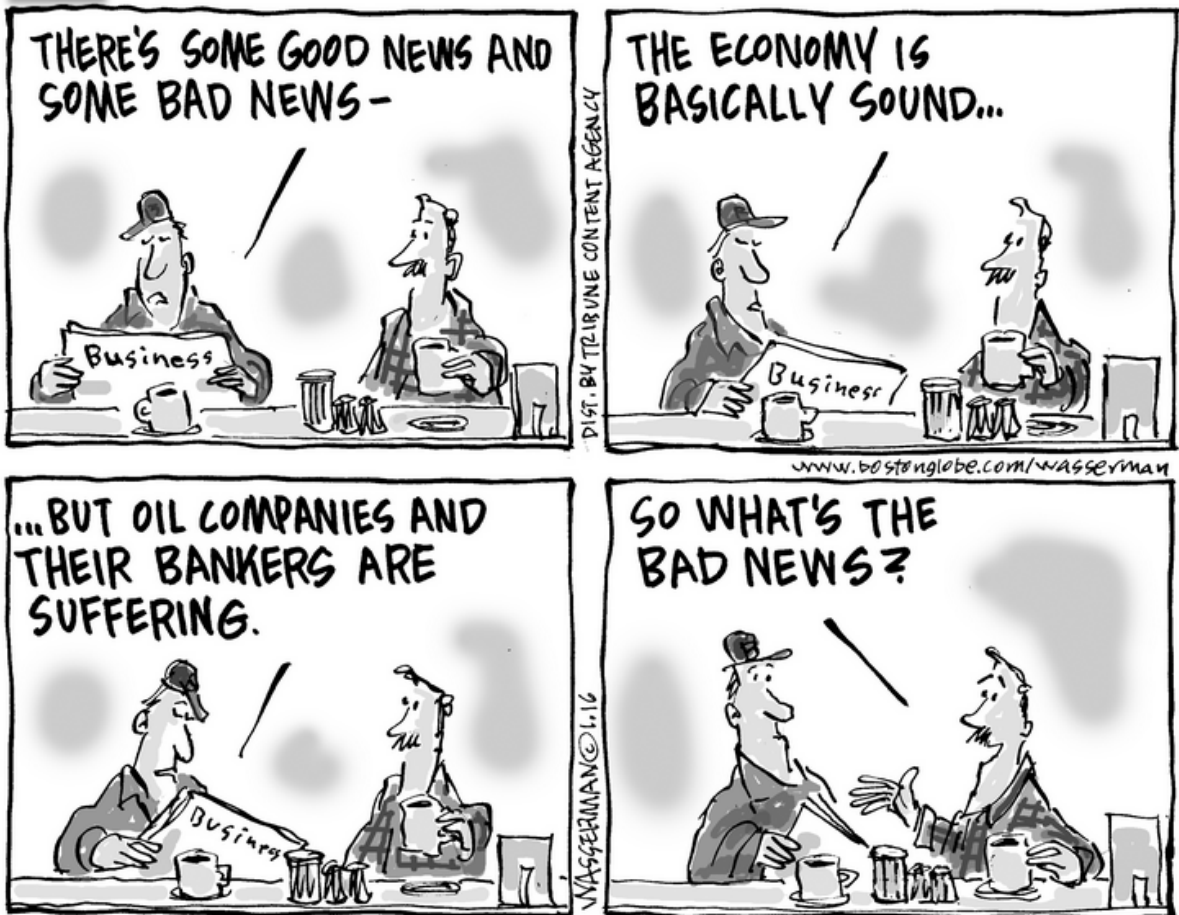
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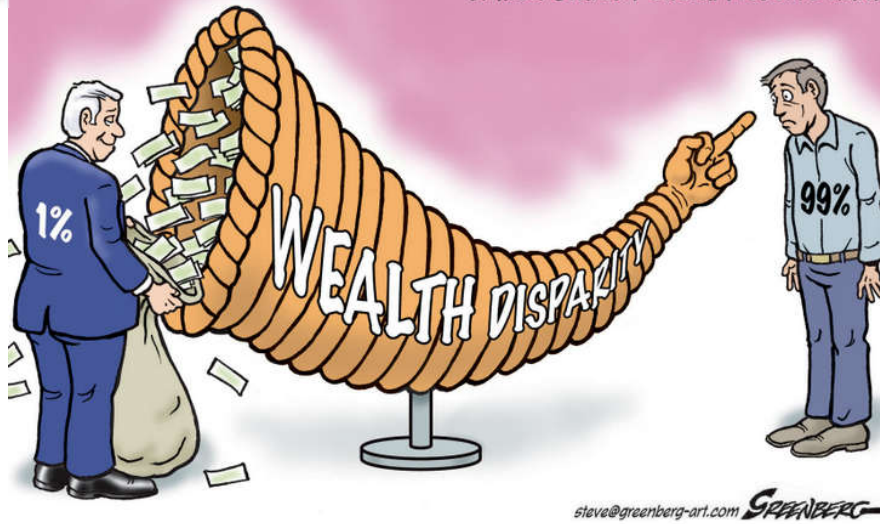


<https://www.bostonglobe.com/opinion/2016/01/26/editorial-cartoon-the-economy/25hjPYLOUcnb9YHcTnuPRL/story.html>

21

The top 1% is now wealthier than the entire Middle Class.

— United States Federal Reserve data



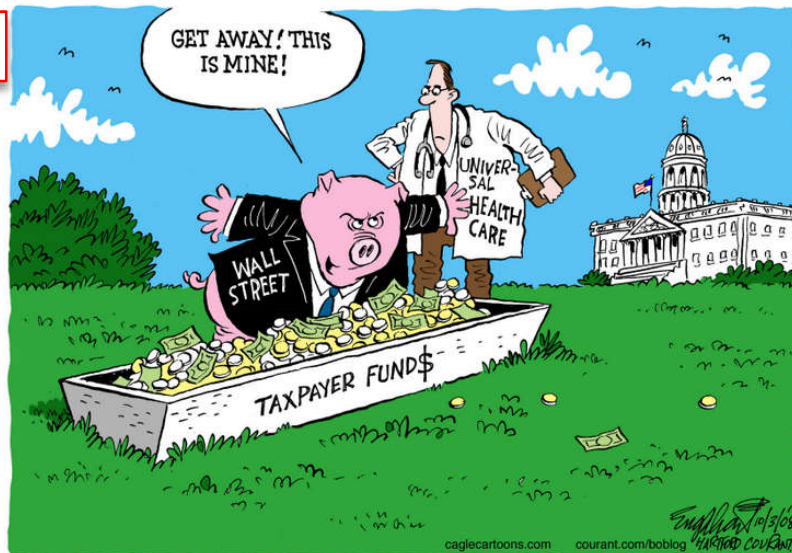
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<https://cagle.com/cartoonist/dave-whamond/2024/11/02/289893/trump-and-the-terrible-tariffs>

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<https://cagle.com/cartoonist/bob-englehart/2008/10/03/56149/wall-street-bailout>

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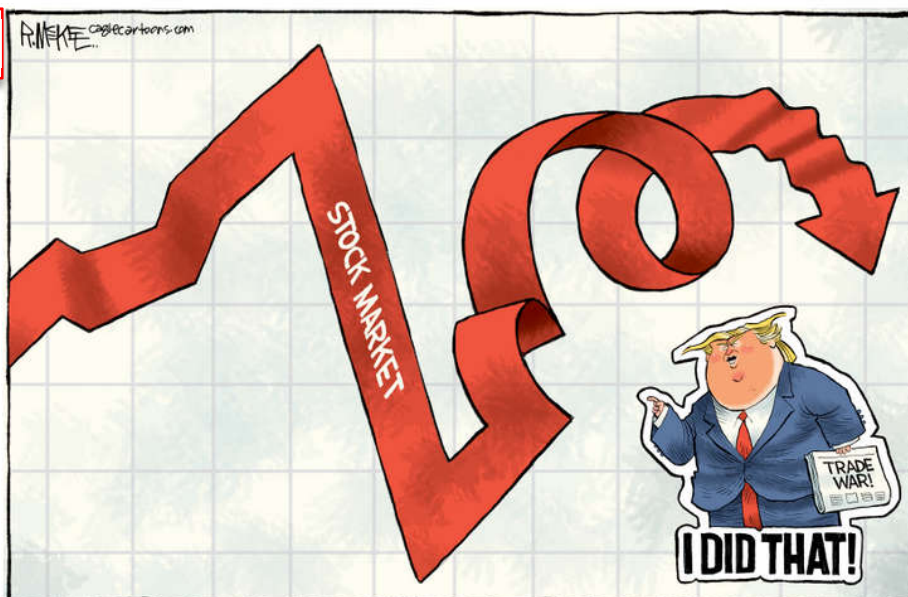
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<https://cagle.com/cartoonist/rick-mckee/2019/06/03/225953/tariff-man>

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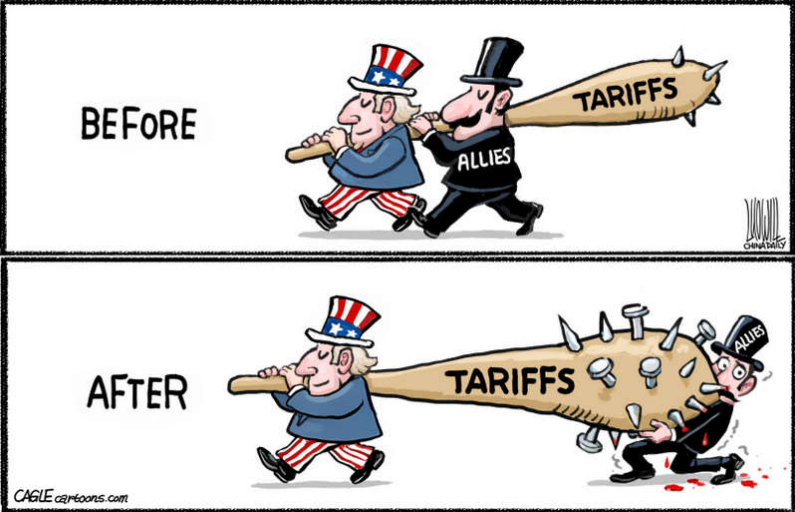
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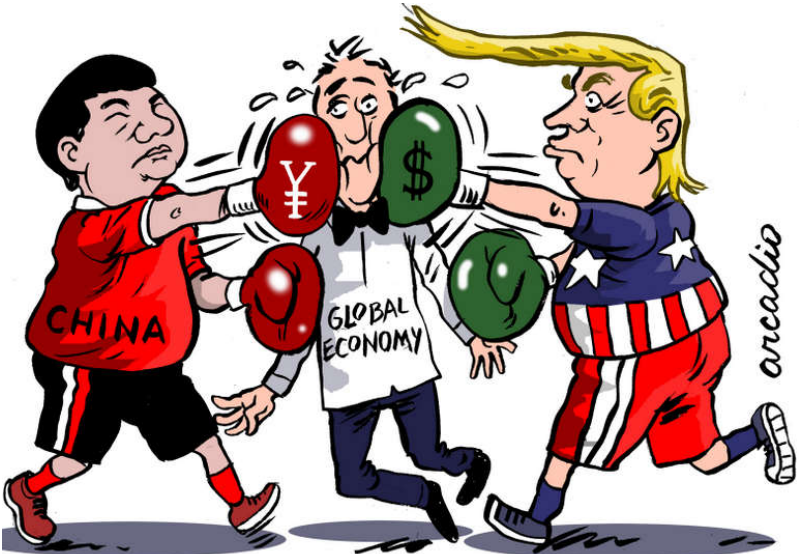
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<https://cagle.com/cartoonist/luojie/2024/12/17/291073/before-and-after>

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<https://cagle.com/cartoonist/arcadio-esquivel/2020/05/20/239265/global-economy>

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<https://cagle.com/cartoonist/patrick-chappatte/2025/02/06/292564/when-trump-picks-at-his-allies>

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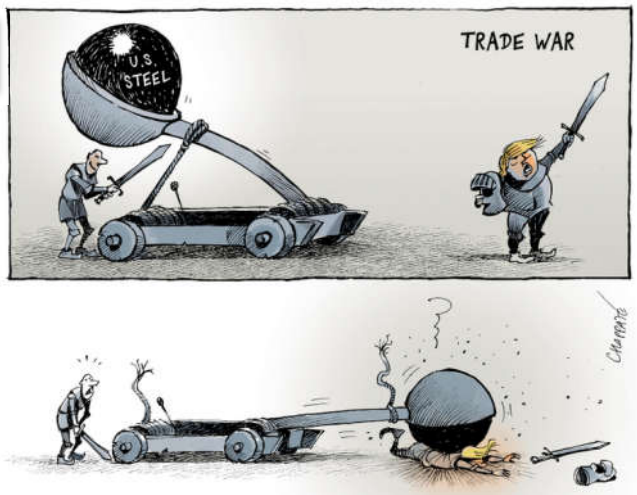
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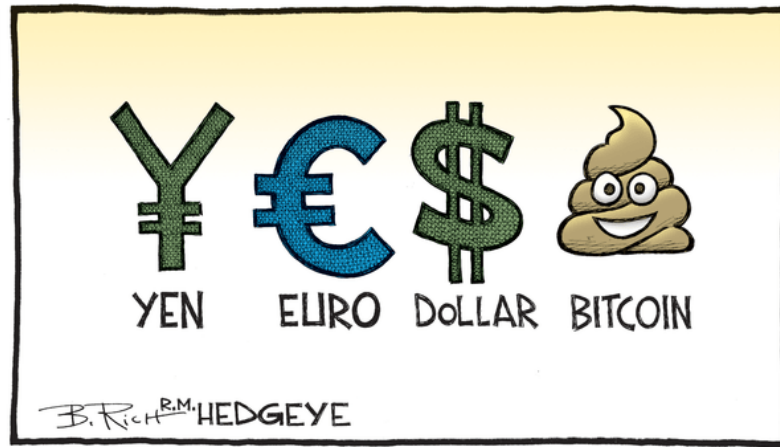
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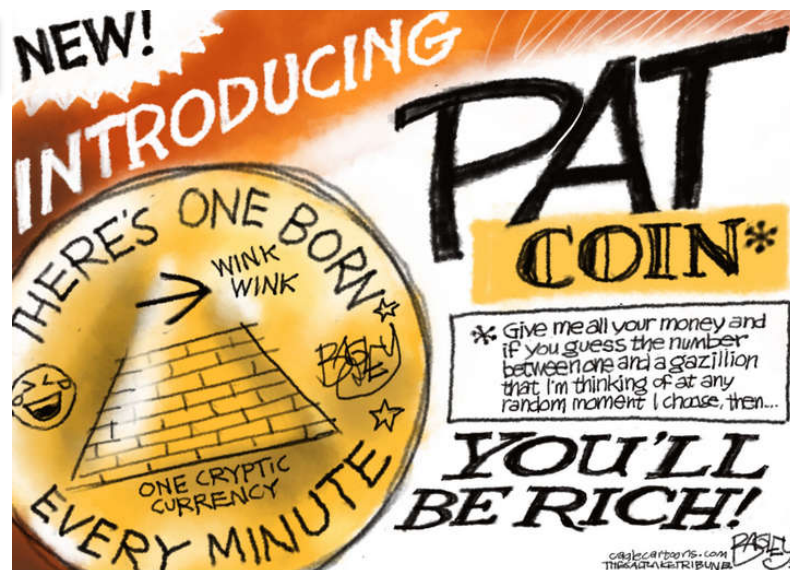
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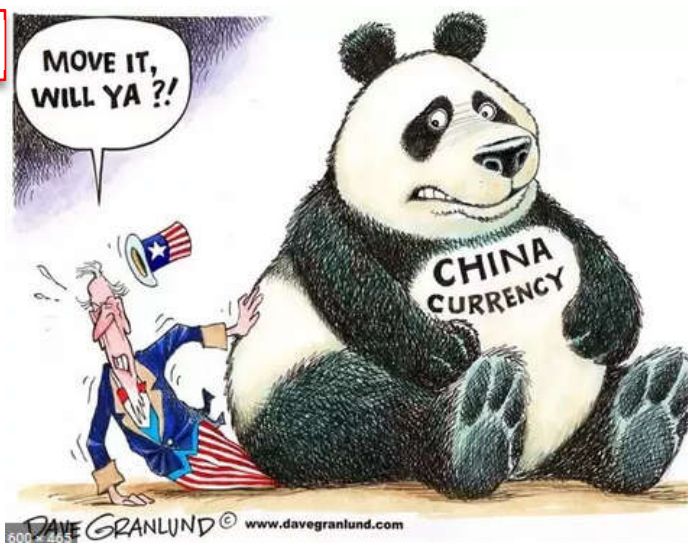
<https://app.hedgeye.com/insights/64906-cartoon-of-the-day-s-coin?type=cartoons>

35



<https://cagle.com/cartoonist/pat-bagley/2025/01/23/292123/crypto-coin>

36



<https://www.quora.com/How-does-a-country-manipulate-exchange-rates>

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A MEME COIN IS A DIGITAL TOKEN PEOPLE BUY TO BE A PART OF SOMETHING, WITH NO SERIOUS EXPECTATION OF GETTING BACK THEIR MONEY. SO IT'S NOT TECHNICALLY "CRYPTOCURRENCY."

**\$TRUMP**

IT'S KLEPTO-CURRENCY.

caglecartoons.com

P. BYRNES.

<https://cagle.com/cartoonist/pat-byrnes/2025/01/29/292301/trump-meme-coin-scam>

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<https://cagle.com/cartoonist/hajo-de-reijger/2018/03/08/207674/bitcoin-rollercoaster>