

# Current Situation of Waste Lead Acid Battery Recycling in Japan

日本における廃鉛バッテリーの回収、リサイクルの状況及び今後の方策

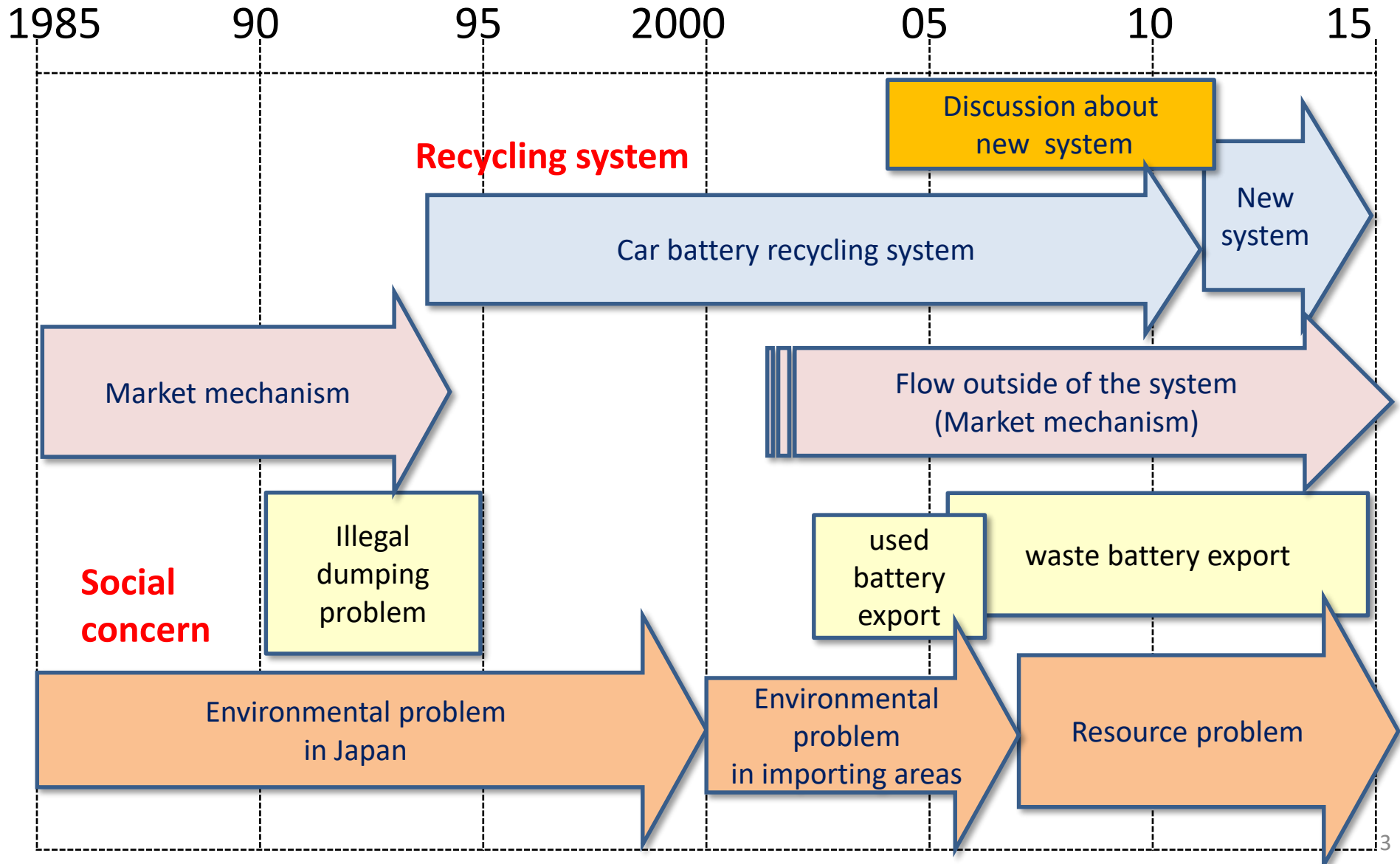
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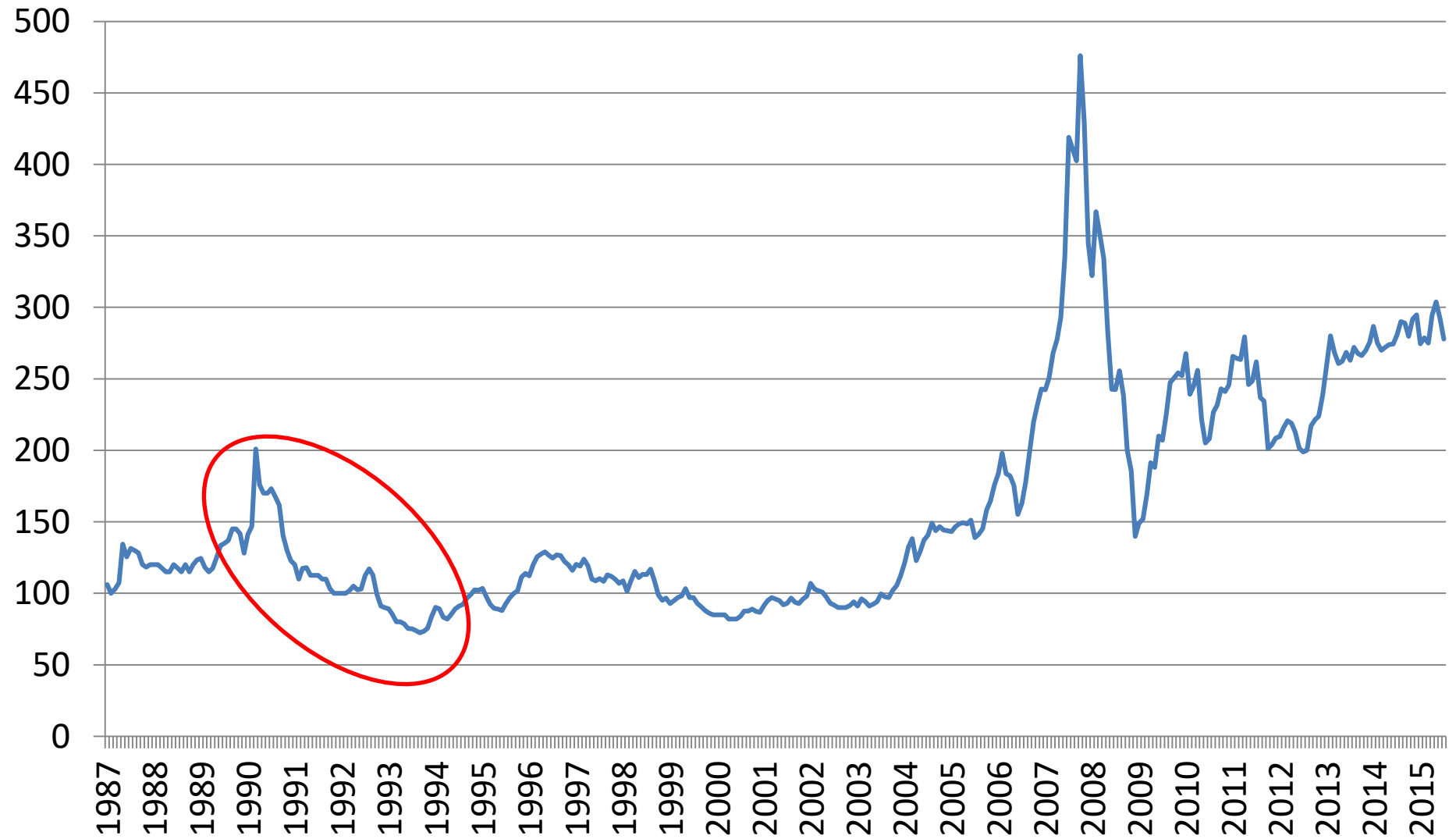
# Outline

- Japan has **a car battery recycling system** in which battery manufacturers are involved.
  - Battery manufacturers established the system (voluntary approach) in 1994.
  - The system was revised in 2014.
- The **export of waste batteries** has increased.
  - The battery recyclers can not get enough waste batteries in Japan.
- Recent Japan is more concerned with the **resource problem** of the waste battery than the environmental problem.

# Recent movement of waste battery recycling in Japan



# Change in lead price in Japan (JPY/kg)



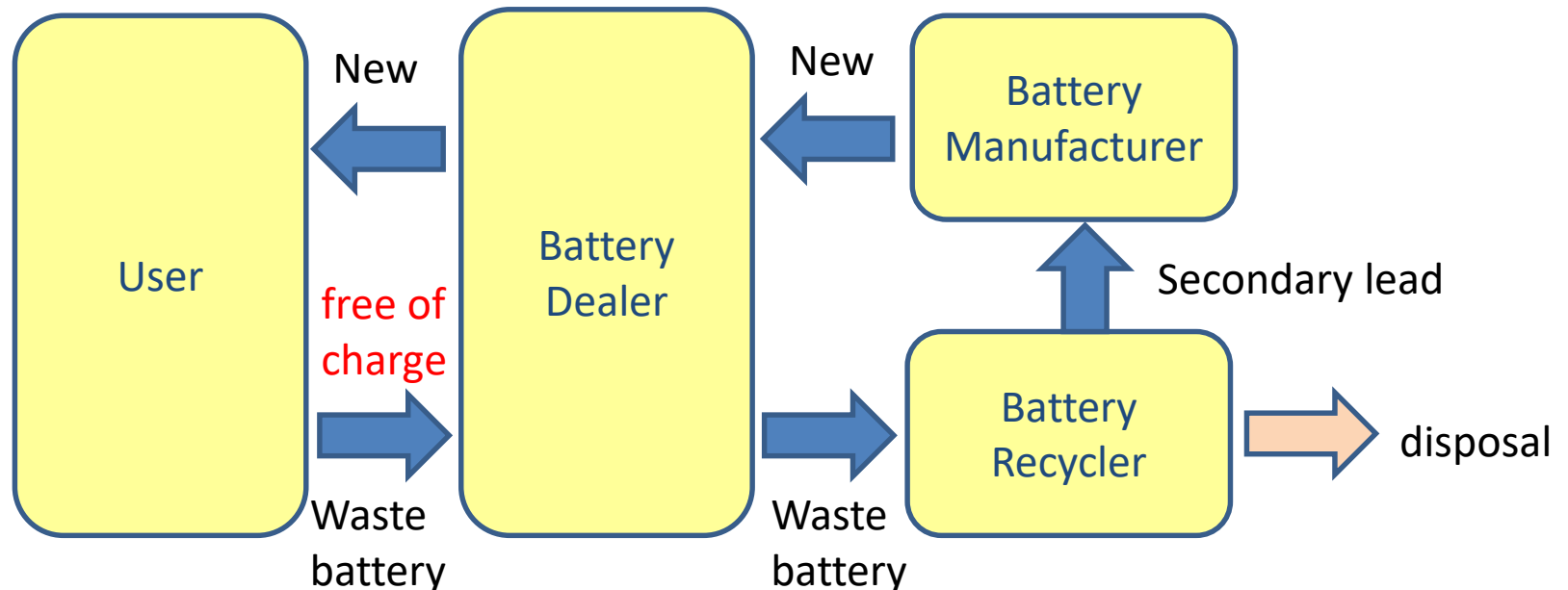
Source: Nikkan Shikyo Tsushinsha

# Early 1990s

- Decrease of the lead price
  - Yen appreciation against the dollar
  - Increase of pollution control cost
  - Decrease in demand of lead
  - Decrease in the export of waste batteries by the international trade regulation of hazardous waste, Basel Convention
- → Prices of some waste batteries became negative.
- → **Illegal dumping** of waste batteries became a social problem in the early 1990s.

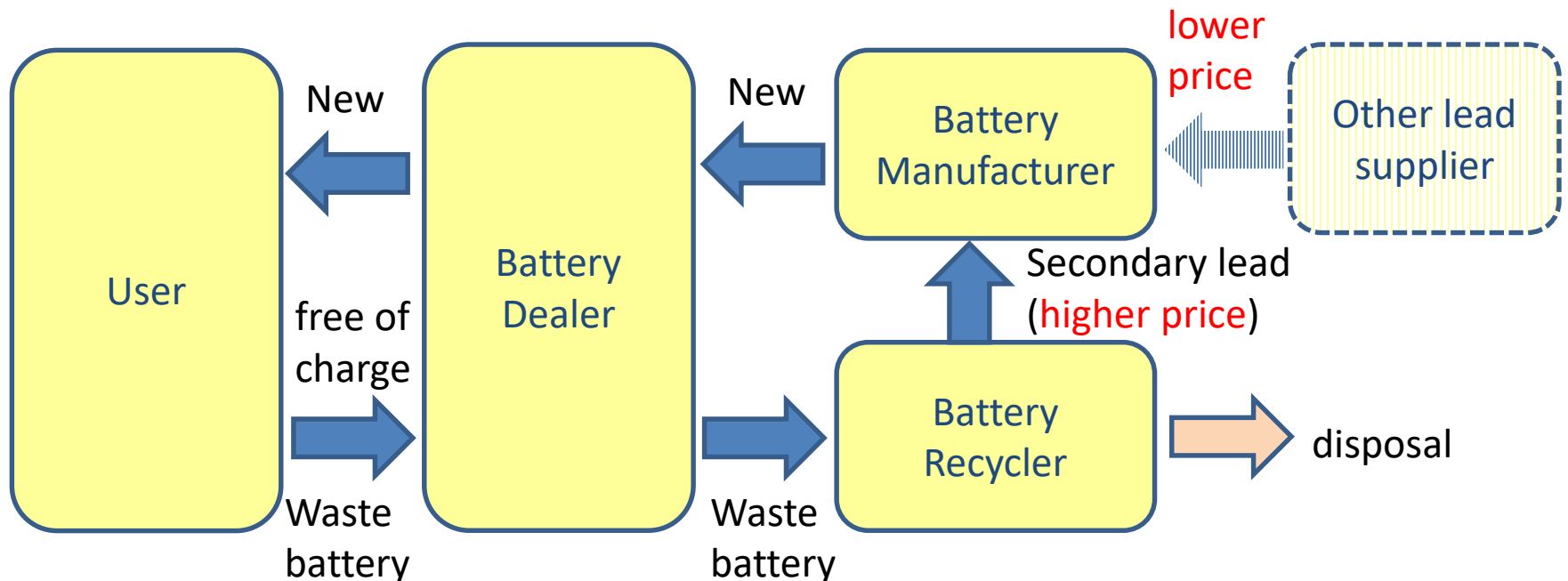
# Car battery recycling system in 1994

- The battery manufacturers (**excluding importers**) established a car battery recycling system in 1994.
- The battery manufacturers were required to set up a situation where a battery user can deliver the waste battery to a battery dealer **free of charge**.
- The battery manufacturers were required to buy **a certain amount of secondary lead** from battery recyclers.



# Problem of the recycling system

- The battery manufacturers had to buy the secondary lead from battery recyclers **even when the price is higher**.
  - They could not select the cheaper lead.
- The national battery manufacturers lost competitiveness in the global market.
- The battery importers increased their market share in Japan.

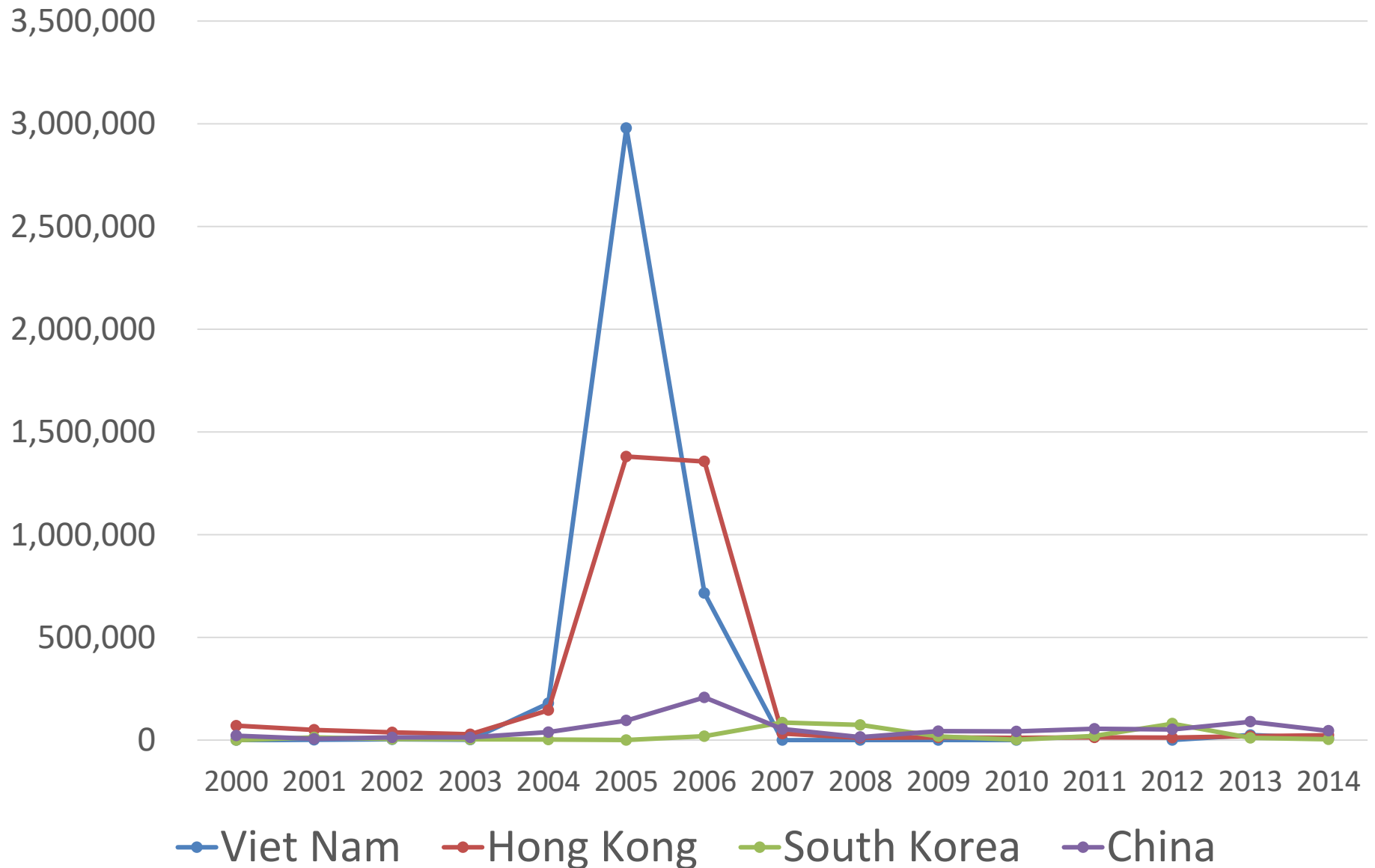


# Discussion about the revision of the car battery recycling system

- In 2005, the government held a committee meeting about a new battery recycling system.
  - One of the discussion points was to involve the battery importers in the system.
- In that situation, the export of **used battery** to Vietnam and Hong Kong was rapidly increased.
  - Environmental problems were concerned in the importing countries.
  - The export/import control was strengthened.
- The lead price gradually increased around 2005.
- Revision of the recycling system was postponed.



# The number of exported car batteries



Source: Ministry of Finance, Japan. Statistical Code: '850710000' (new&used battery) <sub>9</sub>

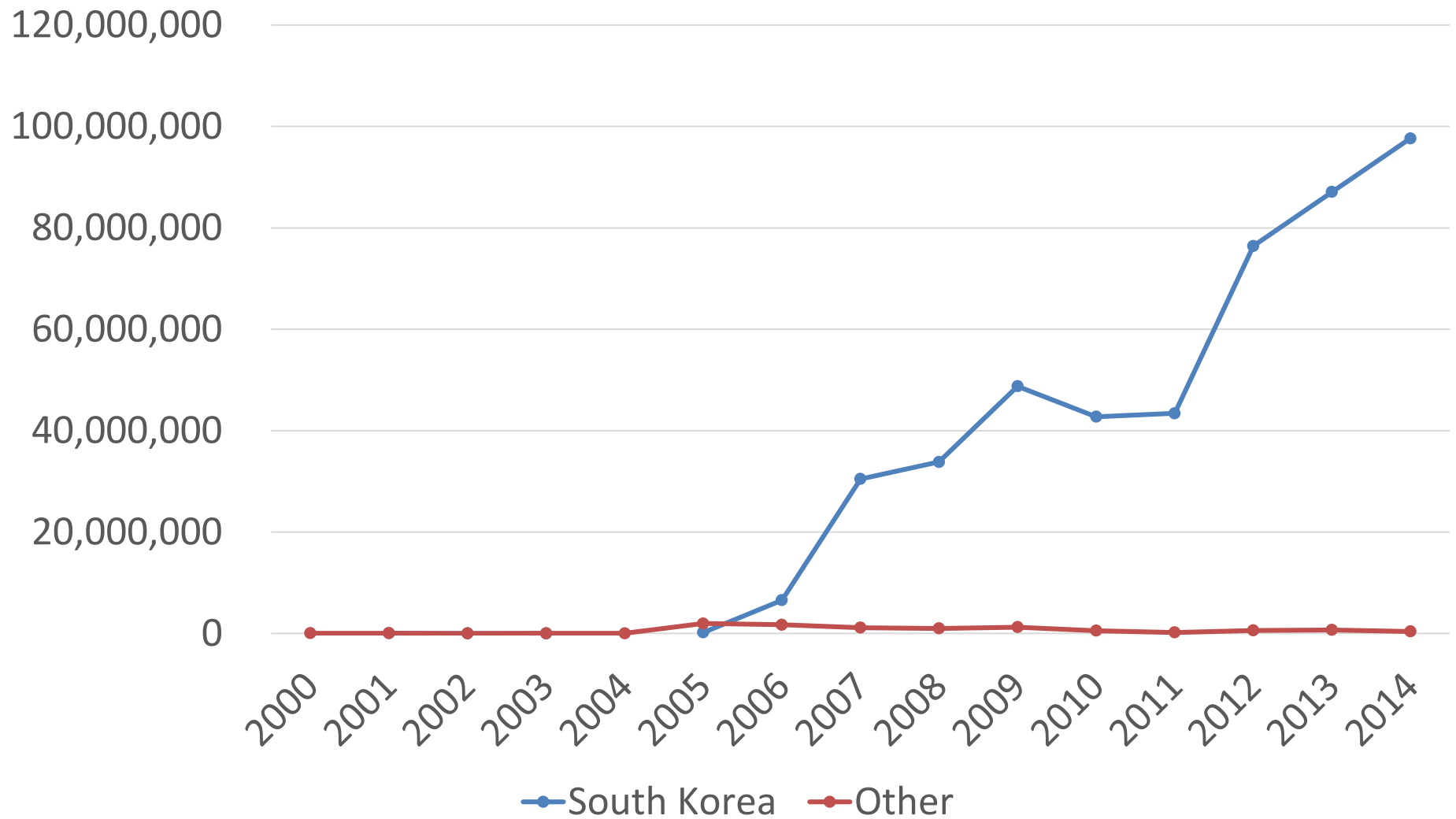
# New battery recycling system in 2014

- Lead Acid Storage Battery Recycle Association, SBRA, started a new car battery recycling system in 2014.
  - The SBRA consists of the battery manufacturers and **importers**.
- The SBRA is required to set up a situation where the battery user can deliver the waste battery to the dealer **free of charge**.
  - The SBRA(**manufacturers and importers**) pays the costs for the battery collection and dismantling.
- The manufacturers are not required to buy a certain amount of secondary lead from recyclers.
  - Secondary lead is traded under the market mechanism.

# Current situation: resource problem

- The export of **waste batteries** to South Korea has increased since the mid-2000s.
- The lead price became relatively higher.
  - Waste batteries are traded at positive prices **outside of the battery recycling system**.
- Recyclers can not do business because they do not collect enough batteries.
  - Resource problem became a large concern in recent Japan market.
  - The government and researchers raise awareness about the flow of waste batteries.

# The export volume of waste battery (kg)



Source: Ministry of Finance, Japan. Statistical Code: '854810000' (waste battery)

# Research project

- In 2014-15, the METI Kyushu (Bureau of Economy, Trade and Industry) and the NSST (Nippon Steel and Sumikin Technology) conducted a **questionnaire survey** about the flow of waste batteries in Kyushu area.
  - Kyushu area is located in the west of Japan and very close to South Korea.
- From the survey, they found out that the **50% of waste batteries** generated in Kyushu area were exported to South Korea.
  - They also showed that the export price was higher than the domestic price.
- However, we can not precisely know where and how the waste batteries would be recycled.



Source: Geospatial Information Authority of Japan

# Importance of flow control

- When waste batteries are traded at negative prices, they are regulated by the Waste Management Law.
  - Battery owners are required to **report on the delivery of waste batteries** to the government.
  - Therefore, we can know the flow of waste batteries.
- However, waste batteries are traded at positive prices in reality.
  - Battery owners do not have an obligation to report on the delivery of waste batteries.
  - We can not know the flow of waste batteries in reality.
- Waste batteries include hazardous materials.
  - It is important to understand how many waste batteries are generated and where they are distributed.
  - We need a system where battery owners report on the delivery regardless of the waste battery price.

Thank you for your attention.