Adverse selection

- Key points
  - Welfare gain to risk averse individuals from being able to buy actuarially fair insurance
  - Market failure: private information about risk type –> may not be able to buy actuarially fair insurance –> may have under-insurance
  - Potential scope for welfare improving government intervention

Adverse selection

- Classic theory: Akerlof (1970); Rothschild and Stiglitz (1976)
- Today: sketch a simplified graphical theoretical framework
    - To illustrate under-insurance and welfare loss that can arise with private information about health
    - To illustrate tradeoffs involved with potential government interventions (e.g. mandates)
- Up next: Take framework to data to:
    - Test for existence of adverse selection
    - Quantify resultant welfare loss
    - Assess welfare consequences of alternative policy interventions
- Overview follows Einav and Finkelstein (JEP 2011)
    - Will use health insurance as concrete example but naturally applies to any insurance

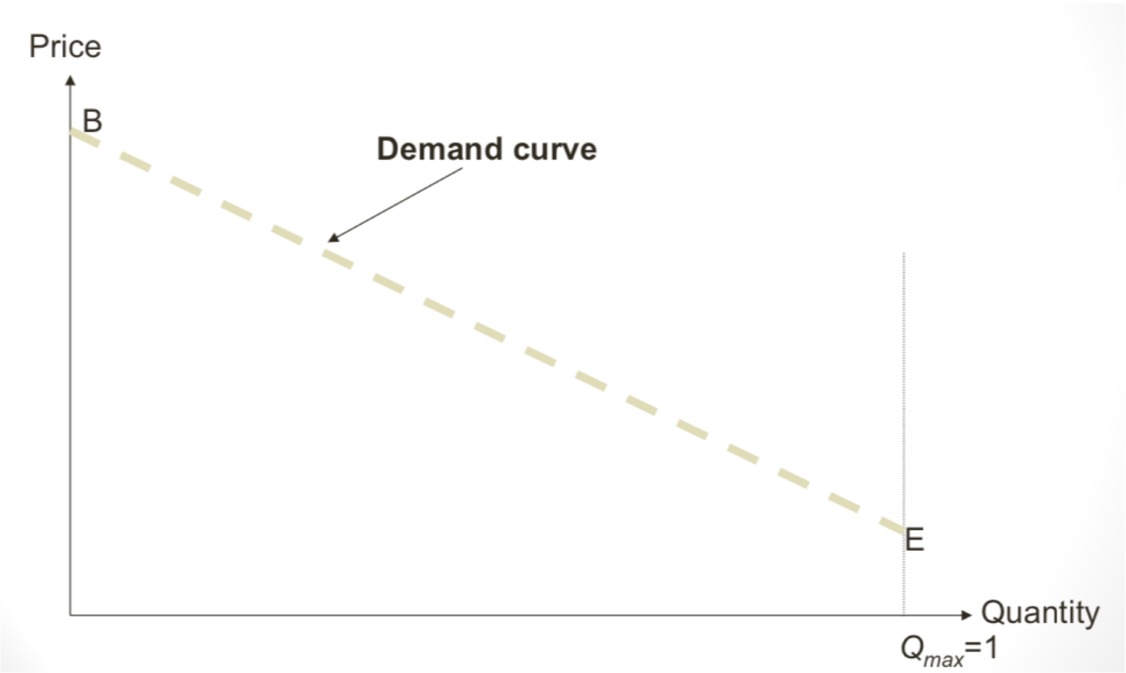
Setup - Textbook case

- Perfectly competitive, risk neutral firms offer a single health insurance product that covers you if you get sick
  - Consumer choice: buy or not buy the contract
  - Important assumption: fixing contract space (Akerlof vs. Rothschild and Stiglitz)
- Risk averse individuals identical except for their (privately known) probability of getting sick
  - NB: Growing empirical evidence on importance of heterogeneity in preferences (as well as risk).
    - Can create opposite results (advantageous vs adverse selection with over- vs under-insurance).
    - Empirically relevant (e.g. long term care insurance; Medigap)
  - Will come back to this...
- No additional frictions (e.g. administrative costs)
  - so firms' (and social) costs of providing insurance are expected insurance claims, that is expected payouts on policies
  - Will relax later in lecture...

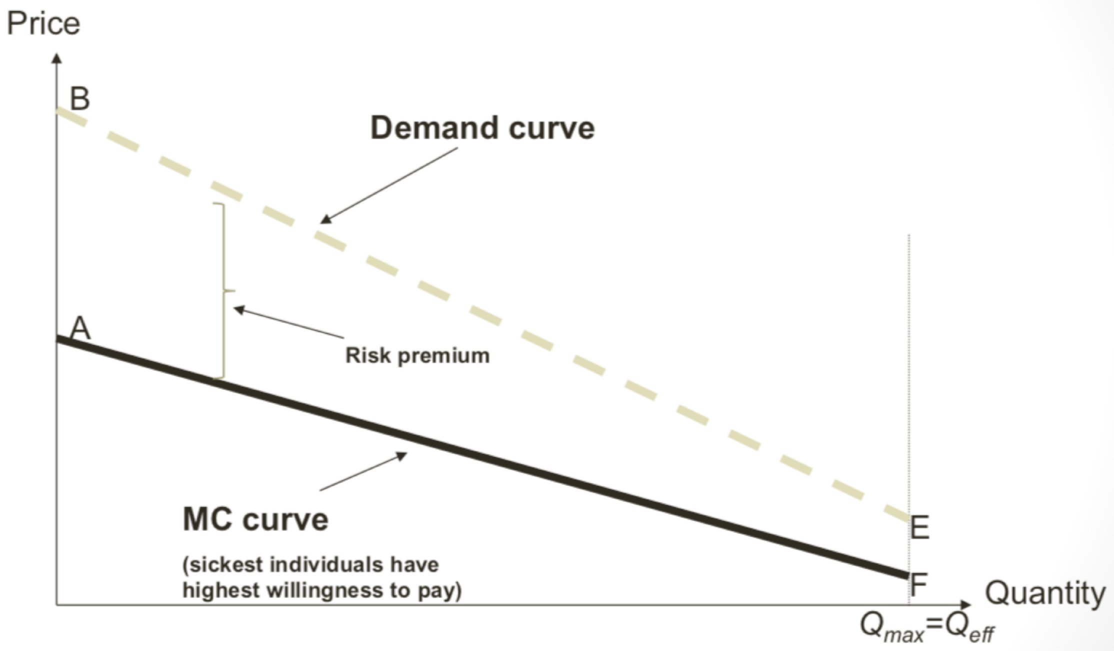
Setup (con't)

- Given this setup, what drives demand?
  - {Note: unit demand. so "quantity" is share of population who purchases}
  - Because individuals identical except for probability of getting sick, individuals with higher probability of getting sick have higher demand (wtp) for insurance
- Implication: downward sloping marginal cost curve
  - Individuals with highest willingness to pay have highest expected costs
  - Link between demand and cost curve is distinguishing feature of selection markets: production costs depend on which consumers purchase your product

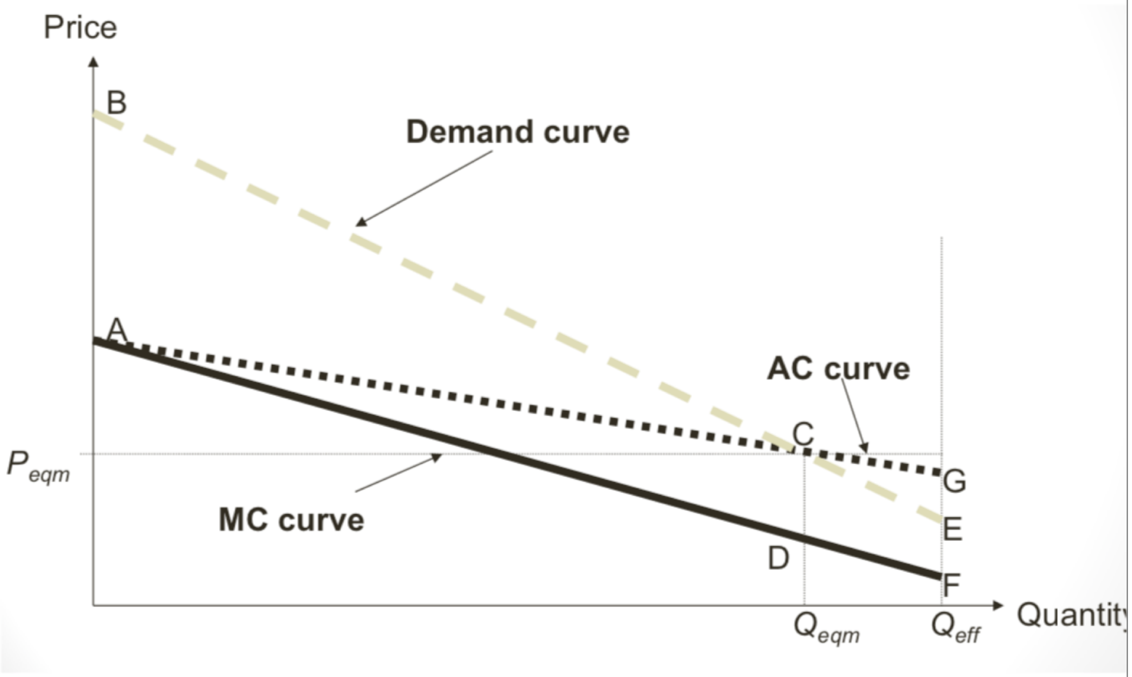
Adverse selection: under-insurance



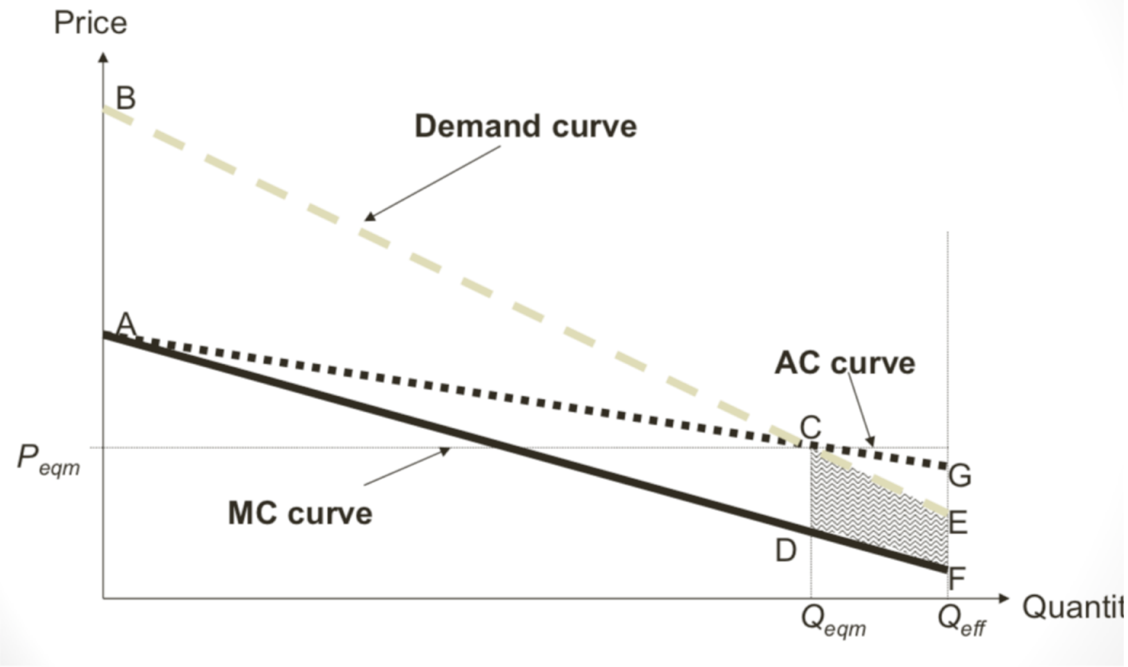
Adverse selection: under-insurance



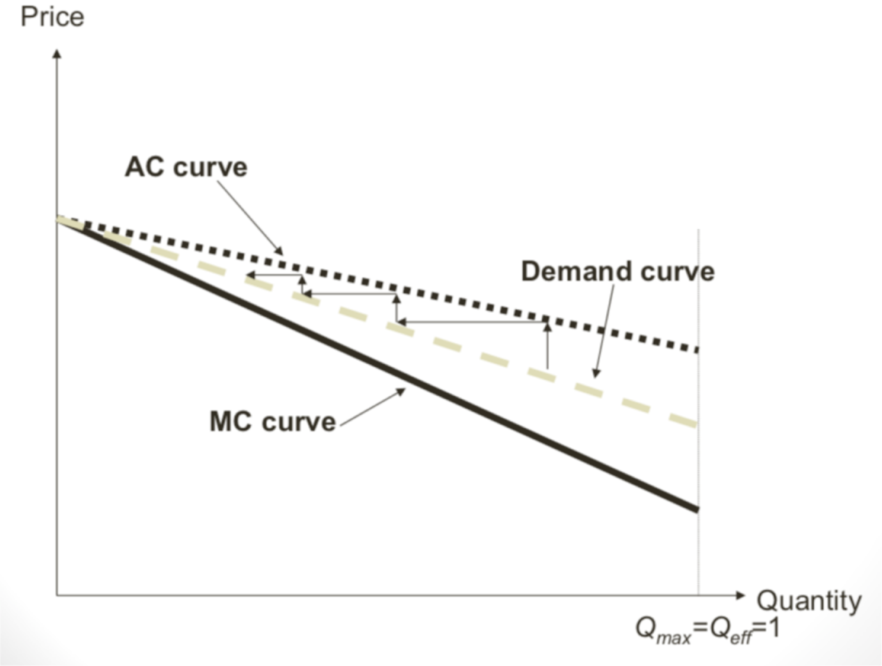
Adverse selection: under-insurance



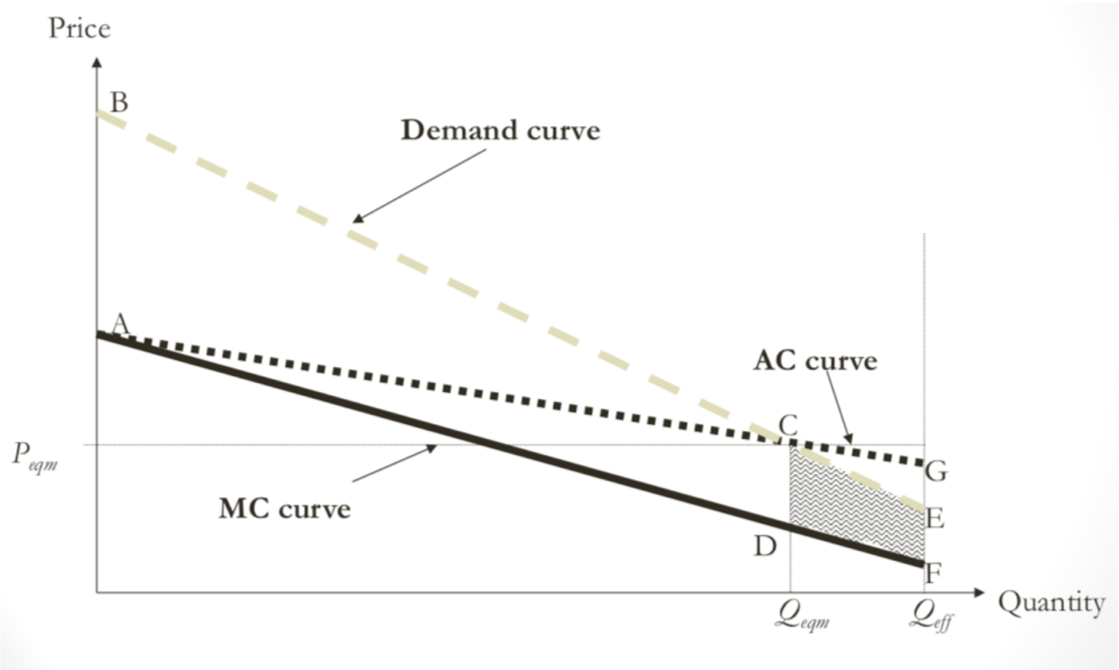
Adverse selection: under-insurance



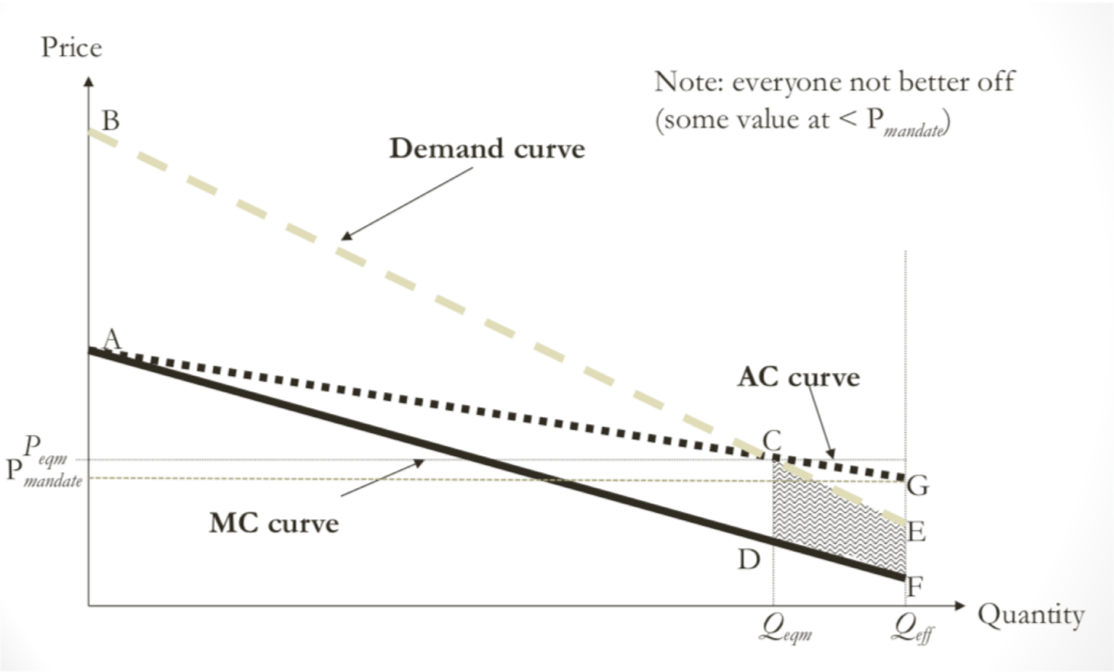
Can get complete unraveling



Mandates as possible solution



Mandates as possible solution



Note: everyone not better off (some value at < $P_{mandate}$)

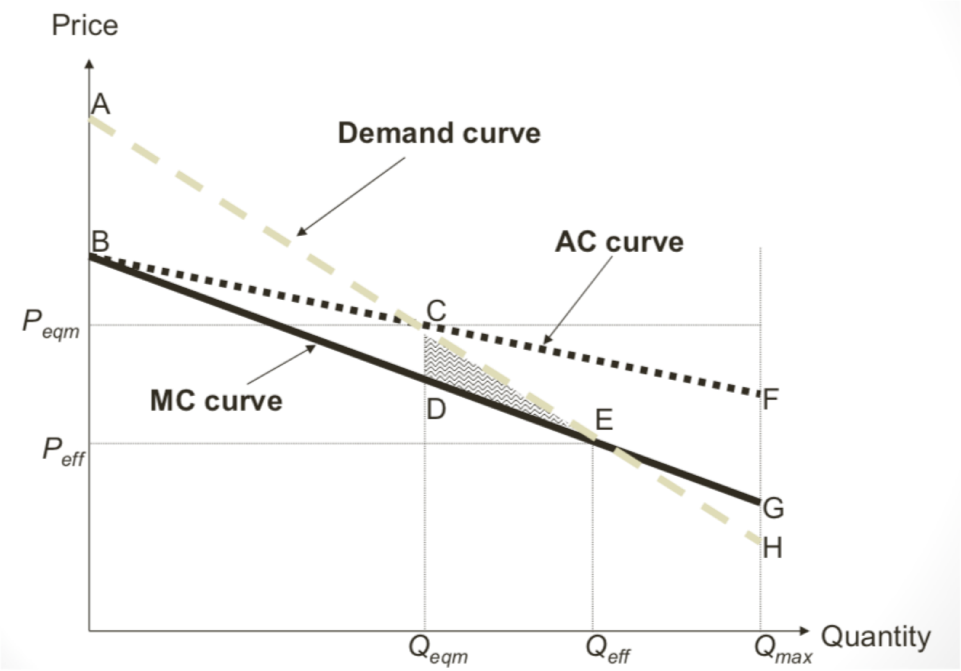
Potential public policy solutions

- Assume government has no better information than firm
- Comparative advantage of government is to manipulate price (tax/subsidies) or manipulate quantity (mandate)
- Subsidize insurance
  - Unambiguous welfare gain (until you consider the cost of public funds or as we will discuss it the "fiscal externalities" of the policy (Hendren 2016))
- Mandate coverage
  - Can achieve efficient outcome (mandate $Q_{mandate} = Q_{\max} = Q_{eff}$)
  - Unambiguous welfare gain; magnitude uncertain
  - Note: *No Pareto Improvement* - some will be made worse off by mandate
    - Useful in understanding '08 Obama-Clinton primary debates...
    - But also model specific (e.g. potential Pareto improving policies in Rothschild-Stiglitz)

Departure from textbook case I: Loads

- Why might it not be efficient to insure everyone (i.e. why might MC be above WTP for some individuals?) Assuming everyone is risk averse...
    - Loading factors on insurance (administrative costs)
    - [Profits – not yet introduced in model]
    - Horizontal product differentiation (HMO vs PPO trades off lower oop costs but with more restrictions on doctor's choice)
    - [Moral hazard - not yet introduced in model]
- With these, everyone may not value insurance at $>$ MC of providing it to them
- What if it is not efficient for everyone to buy insurance?
    - No longer unambiguous welfare gain from mandate
    - Tradeoff between two allocative inefficiencies: under-insurance from adverse selection vs. over-insurance from mandate
        - And this is still without allowing for preference heterogeneity! That introduces further sources of ambiguity...

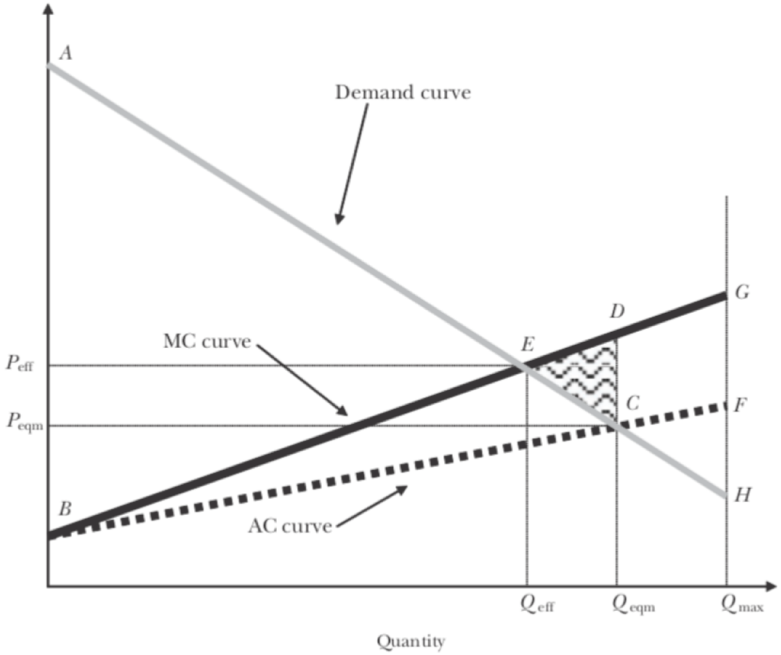
Adverse selection with loads



Departure from textbook case II: Preference heterogeneity

- Individuals may differ not only in their risk type but also their preferences (e.g. risk aversion / willingness to bear risk)
  - WTP increasing in risk aversion and in risk
- Creates potential for *advantageous* selection (opposite results of *adverse* selection)
- If high-risk individuals are less risk averse and heterogeneity in risk aversion is large, can get upward sloping marginal (and therefore average) cost curve
  - Individuals with highest WTP are the most risk averse and lowest (vs. highest) expected cost

Advantageous selection



Advantageous selection

- Over-insurance
  - Opposite problem from adverse selection
- Opposite policy solutions
  - e.g. tax (vs. subsidize) insurance