The Pricing of Organic Wines

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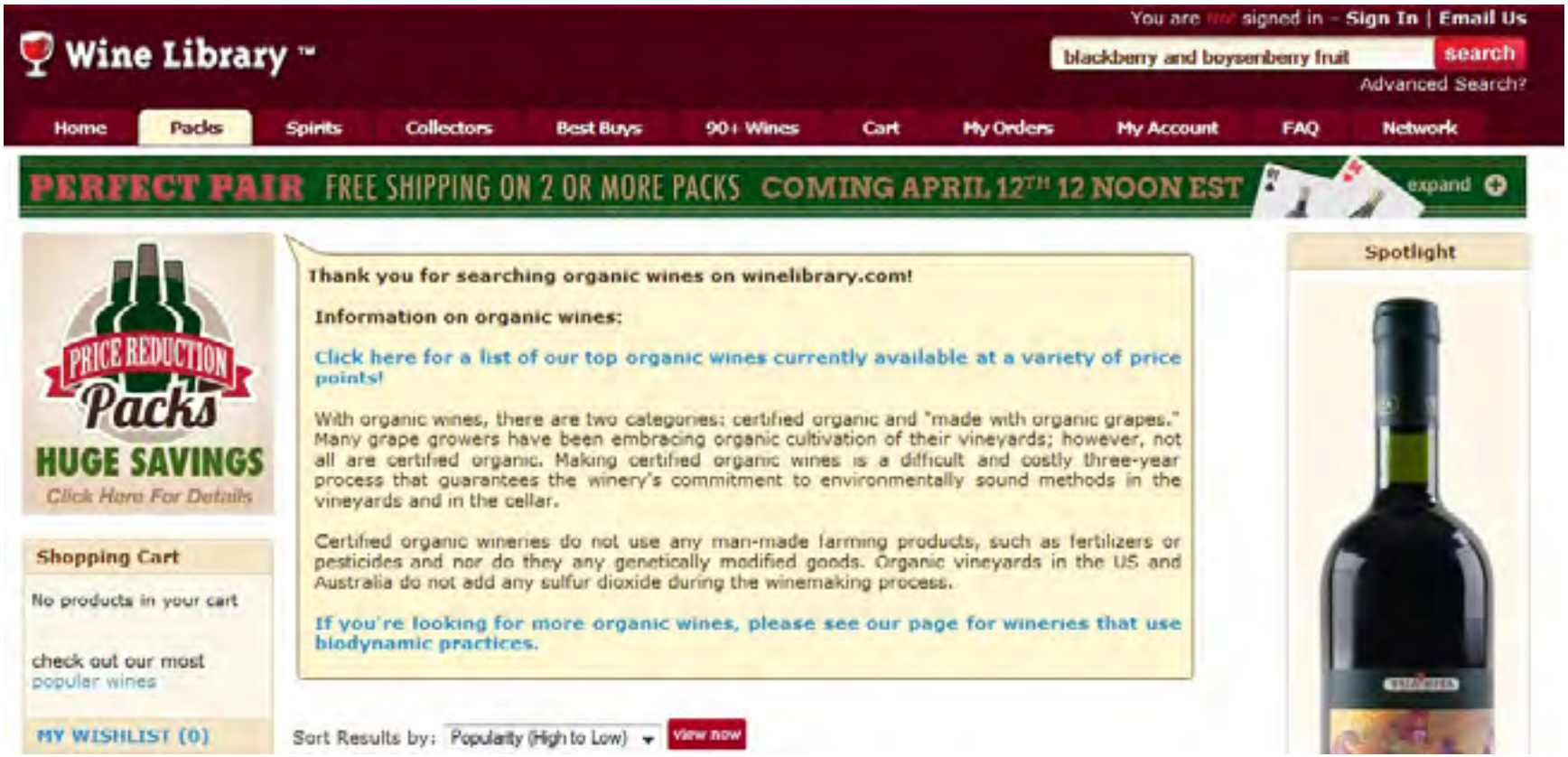
CCOVI Fellow

April 2011

Market Presence



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JJB lands in Bordeaux! Follow us as we explore the 2010 vintage!
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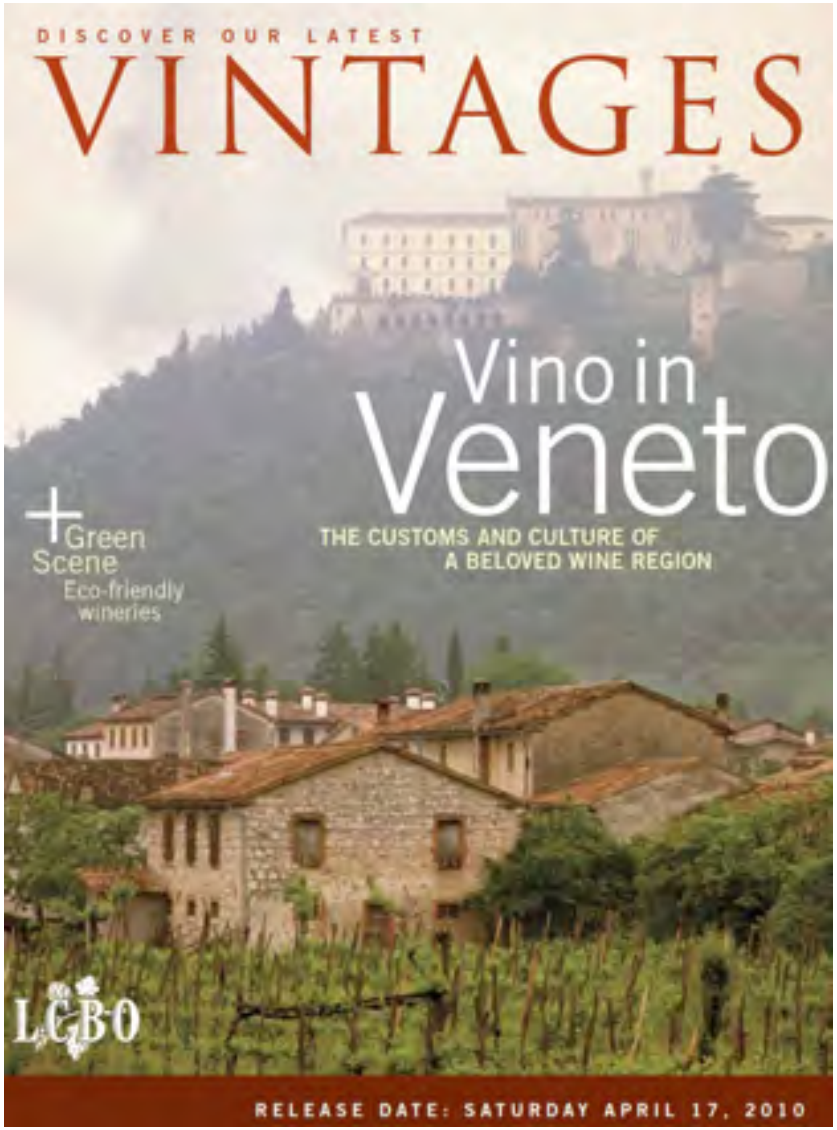
New Arrivals From Rioja
2006 Brunello Pre-Arrivals
WINE SPECTATOR TOP 100 2010
WS Top 100!
Life Goes Better With Bordeaux
Bordeaux Under $35
Best Sellers


DISCOVER OUR LATEST
VINTAGES
Vino in
Veneto
THE CUSTOMS AND CULTURE OF
A BELOVED WINE REGION
+Green
Scene
Eco-friendly
wineries
LCBO
RELEASE DATE: SATURDAY APRIL 17, 2010

the green teams
Embracing organic, biodynamic and energy-efficient practices, eco-friendly producers are saving the earth, one vineyard at a time.
the green movement is expanding with increasing speed, and the wine industry is keeping pace. Each year sees more forward-thinking wineries around the world going green. The shift has been in the works for years, and over the last decade, eco-friendly producers have managed to balance an uncompromising approach to quality with organic, biodynamic, carbon-neutral and sustainable agriculture principles. The resulting wines have received widespread acceptance and plenty of acclaim. We've carefully selected outstanding offerings from top eco-friendly producers—wines that are easy on the earth and the palate.
Bonterra
STERLING VINEYARDS
OVA
OVA
ORGANIC

DISCOVER OUR LATEST • SATURDAY, FEBRUARY 19, 2011

BONTERRA SYRAH 2007
Mendocino County,
Made from Organic Grapes
Match this rich and flavourful wine with spare ribs and a robust sauce. At press time, the free sulphur reading was unavailable. Please check our website at *vintages.com*

TASTING NOTE: Black cherry and milk chocolate aromas and flavors, medium body, fruity. Recommended. (Fred Tasker, *The Miami Herald*, Sept. 22, 2010)

573709 (D) 750 mL **$19.95**
Organic Product

GHOST PINES WINEMAKER'S BLEND MERLOT 2007
Napa & Sonoma Counties
(Louis M. Martini Winery)
TASTING NOTE: The name Ghost Pines has always made me think of fall walks through foggy woods with trees disappearing into the mist in the distance. Romantic thoughts are often enhanced by having a great wine to accompany them. This blend of roughly equal parts Napa and Sonoma grapes offers aromas of blueberry, cherry and spice with flavors of rich, juicy berry, coffee, cocoa and a finish of toasty oak. (Chuck Hill, *Wines Northwest*, Nov. 16, 2010)

135384 (D) 750 mL **$19.95**
Featured on the back cover

Empirical Findings

- Delmas and Grant (2010) - Price premium puzzle in organic wines

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  - Price $\uparrow$ 13% - Wines produced using organic grapes.

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- Delmas and Grant (2010) - Price premium puzzle in organic wines
  - Price $\uparrow$ 13% - Wines produced using organic grapes.
  - Price $\downarrow$ 20% - Organic wines with an eco-label.

Quality Implications

Choice

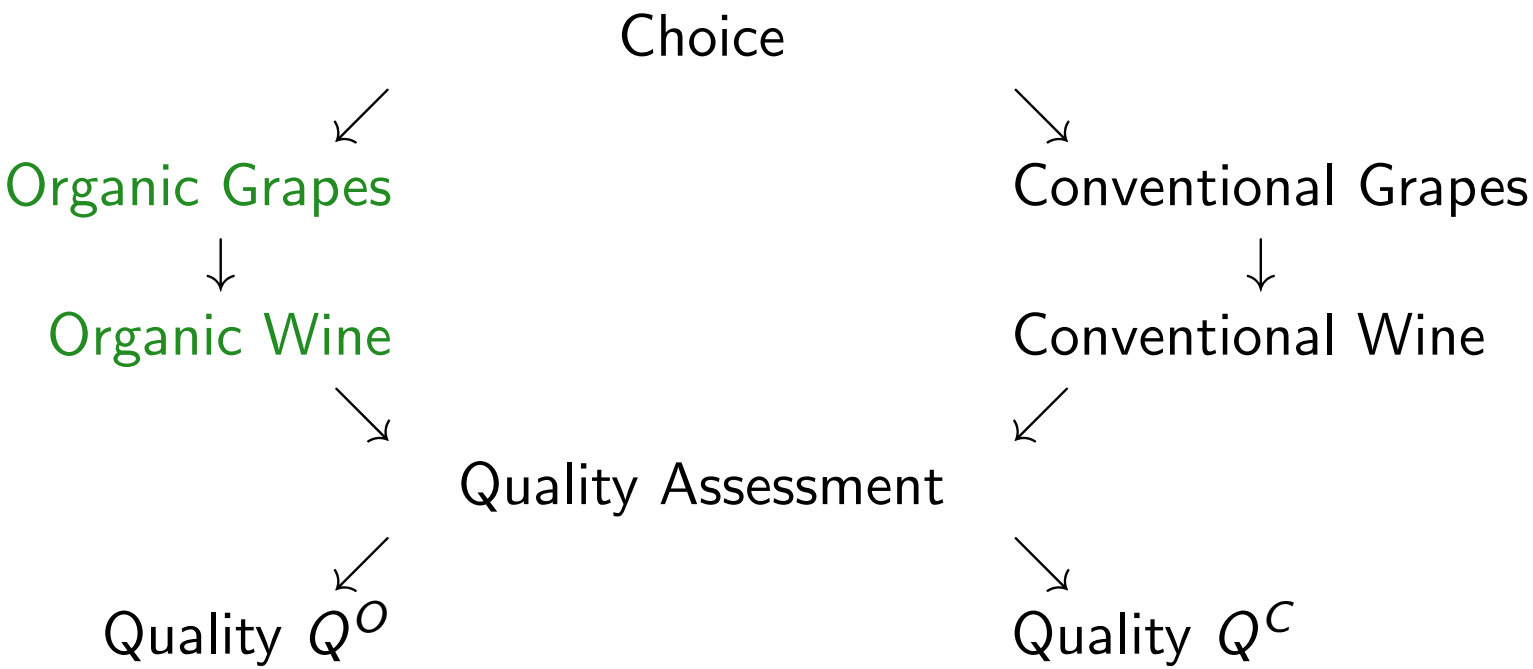
↙ Organic Grapes

↓ Organic Wine

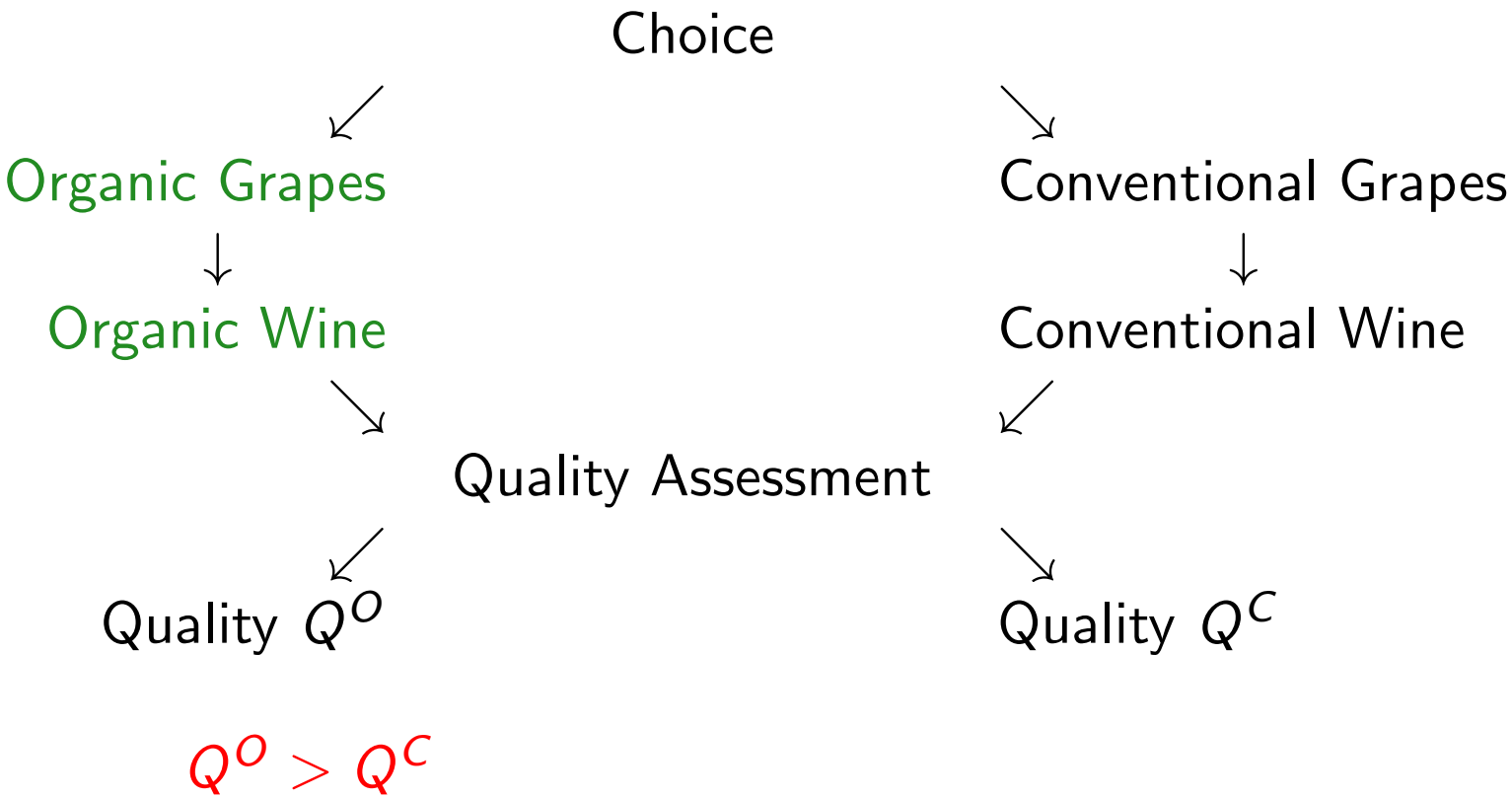
↘ Conventional Grapes

↓ Conventional Wine

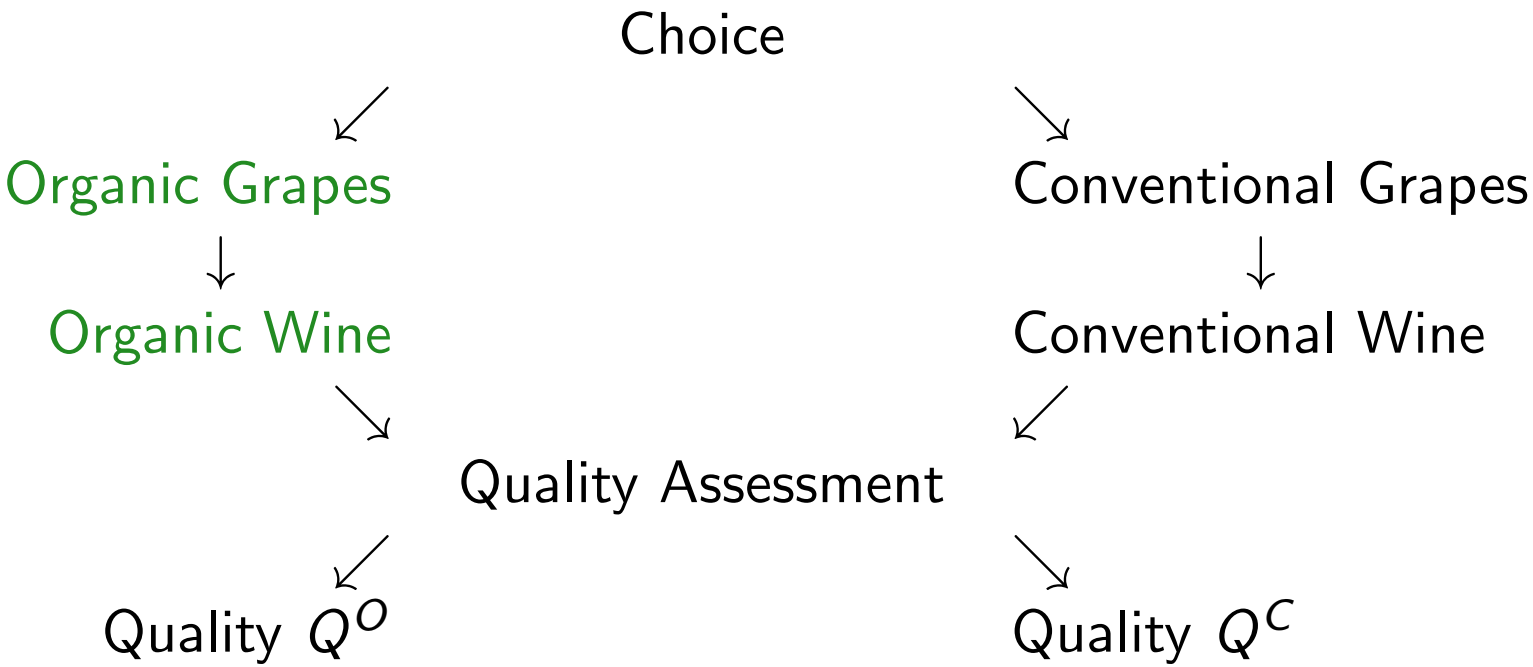
Quality Implications



Quality Implications



Quality Implications



$$Q^O > Q^C \quad \Rightarrow \quad P^O > P^C \text{ (13\% Premium)}$$

2003 US AC Nielsen survey (Everage)
-"The reasons consumers purchase organic products"

- 32% - Organic is healthier
- 18% - Contain no pesticides
- 11% - Better quality
- 3% - Prevent allergic reactions
- ⋮

Château
d'Armailhac
Grand Cru Classé
PAUILLAC

CHÂTEAU
PONTET-CANET
PAUILLAC
APPELLATION PAUILLAC CONTRÔLÉE
13% VOL.
MIS EN BOUTEILLES AU CHATEAU
750ml
PRODUIT DE FRANCE

Château
d'Armailhac
Grand Cru Classé
PAUILLAC

90-93

CHÂTEAU
PONTET-CANET
PAUILLAC
APPELLATION PAUILLAC CONTRÔLÉE
MIS EN BOUTEILLES AU CHATEAU
PRODUIT DE FRANCE

93-95

90-93
$62.50

93-95
$127.95

90-93
$62.50

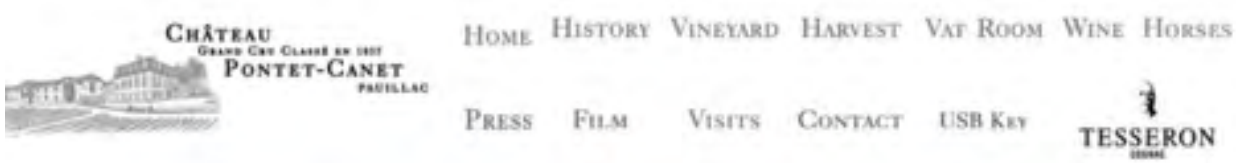
93-95
$127.95

93-95

90-93
$62.50

93-95
$127.95

93-95
$114.05



A CAREFULLY-TENDED VINEYARD

Château Pontet-Canet is located in the heart of the Pauillac appellation, just south of château Mouton Rothschild and d'Armailhac. It has the poor gravelly soil typical of the greatest vineyards. In fact, the soil has so much gravel and sand that it is difficult to imagine that anything could grow there at all. The 80-hectare (200 acres) estate is predominately planted with Cabernet Sauvignon, the signature variety for the great wines of Pauillac. This demanding grape is perfectly adapted to Pauillac's climate and soil. It produces full-bodied, well-structured, long-lived wines famous for their finesse and elegance. In keeping with a long-standing Médoc tradition, it is blended with Merlot and Cabernet Franc, which add a touch of smoothness and charm. In certain vintages, Petit Verdot can also be counted on to contribute complexity.

Pontet-Canet's terroir features rises of Garonne gravel on limestone bedrock. The soil is lean, warm, and well-drained. In order to make the most of this terroir, Alfred Tesseron instituted a plot-by-plot vineyard management system. Careful observation year after year has led to an intimate familiarity with practically every vine. The château's winegrowing philosophy is to intervene as little as possible and as naturally as possible in the vineyard. Only traditional viticultural and cultivation practices are used. Chemical weed killers are banned in keeping with environmental protection, and priority is given to the vine's long-term health.

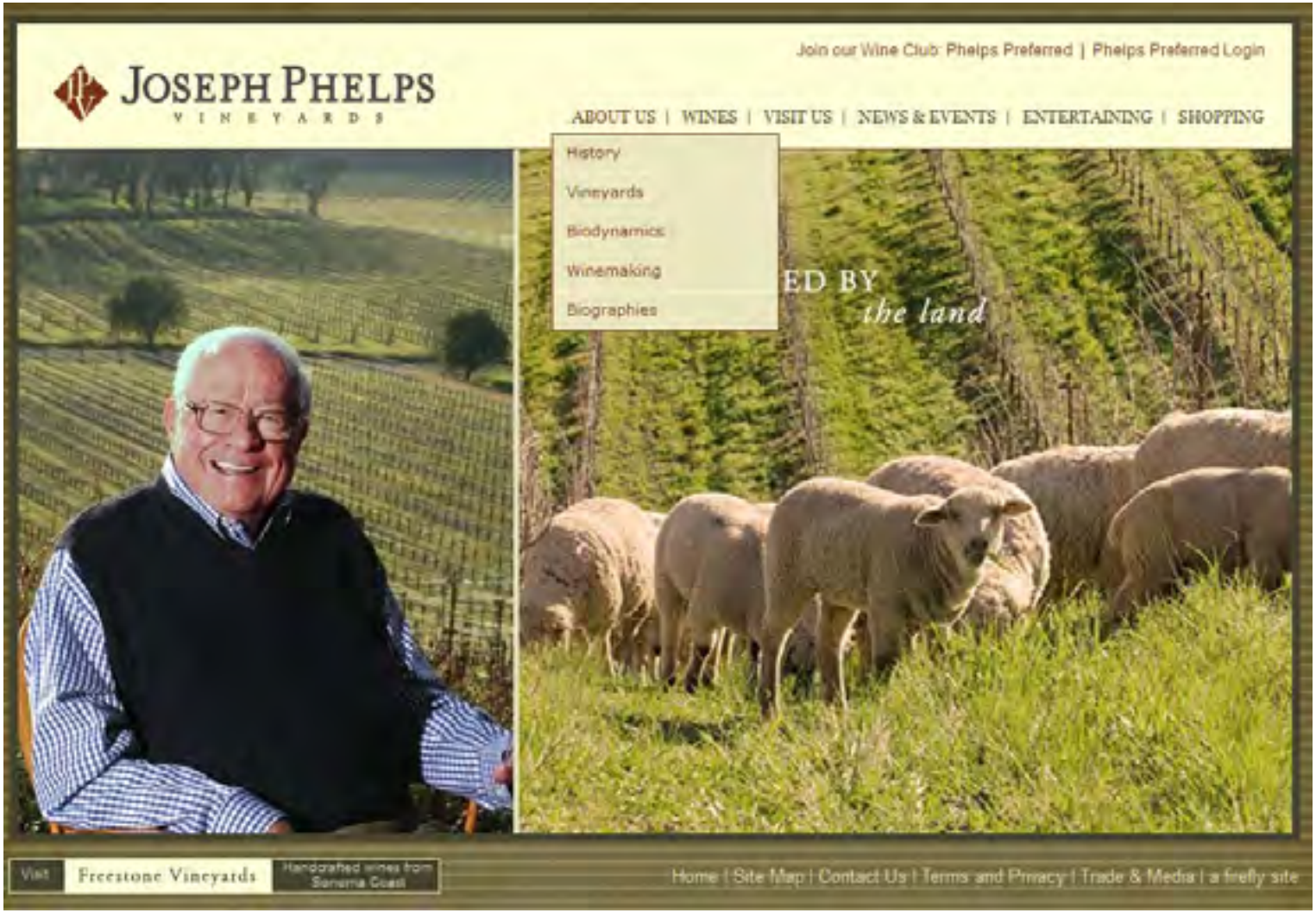
RESPECTING THE VINES

In keeping with this spirit, fertilizers are uniquely organic, and only used on plots that genuinely require extra nutrition. This helps to maintain a good balance and self-regulated low yields, as well as to respect the vines, reflect the terroir, and produce pure, natural wine. Pruning is done with the greatest of care in winter by qualified workers who are paid a fixed monthly salary rather than on a piece-work basis. Each individual vine is considered separately and treated accordingly. All these efforts result in grapes that are evenly distributed, with good ventilation, maximum sun exposure, and improved ripeness.

- Pontet Canet will make no outward sign on the label either of being organic or biodynamic (a more far-reaching form of organic farming that the chateau received Biodyvin certification for in 2006).
"Chateaux who claim to practice organic viticulture without applying for certification are often paying lip service to it simply for marketing reasons," Jean-Michel Comme, director of Chateau Pontet Canet said.

- Decanter (Jan. 10, 2011)

JOSEPH PHELPS
INSIGNIA
NAPA VALLEY ESTATE GROWN
VINTAGE 2007
RED WINE
Backus
NAPA VALLEY
OAKVILLE
CABERNET SAUVIGNON
2007
JOSEPH PHELPS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Bonterra
VINEYARDS
CHARDONNAY
MENDOCINO COUNTY
ORGANICALLY GROWN GRAPES

Cono Sur
Cabernet Sauvignon /Carmenere
Valle de Colchagua
CHILE
Organically grown grapes
Raisins de culture agro-biologique

Price penalty of approx. 20%!

Is price quality driven for organic wines?

For Wineries...

- Conventional or Organic?

For Wineries...

- Conventional or Organic?
- Why use eco-labels?

For Wineries...

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- Why use eco-labels?
  A potentially important source of information

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FEATURE PRODUCTS

USA – CALIFORNIA

RED WINE

TABLAS CREEK VINEYARD ESPRIT DE BEAUCASTEL ROUGE 2007

Paso Robles

TASTING NOTE: The profound 2007 Esprit de Beaucastel (a 4,200-case blend of 44% Mourvedre, 29% Grenache, 21% Syrah, and 6% Counoise) boasts a glorious perfume of roasted herbs, Peking duck, soy, blueberries, blackberries, and bouquet garni. This elegant yet powerful, dense, multilayered wine saturates the palate, possesses multiple dimensions, beautiful nuances, and a stunningly long finish that lasts over 40 seconds. It should provide plenty of pleasure over the next 10-15 years. Score: **(95-97)** (Robert Parker Jr., *www.erobertparker.com*, Aug. 2009)

735654 [XD] 750 mL $45

DUCKHORN VINEYARDS ESTATE GROWN CABERNET SAUVIGNON 2006

Napa Valley

TASTING NOTE: 21% Merlot; 3% Cabernet Franc. Confident, cassis-like fruit and creamy oak share the stage in the sweet and accessible aromas here, but the wine clearly favors red cherry flavors and Merlot-like plumpness once in the mouth. It is moderately full-bodied and fairly supple in feel, and, even if finished with nominal tannin, it is already a thoroughly drinkable wine and should achieve peak form in but three to five years. Score: **89** (*Connoisseurs' Guide to California Wines*, April 2010)

921361 [D] 750 mL $89

FROG'S LEAP RUTHERFORD CABERNET SAUVIGNON 2006

Rutherford, Napa Valley

Industry leaders in eco-conscious winemaking, the team at Frog's Leap use organic fertilizers and encourage cover crops in the vineyard. These measures enhance natural soil health and translate into characterful wines that beautifully express terroir – in this case, Rutherford's unmistakable complex minerality – and the grape variety's inherent fruit flavours. Also known simply as "the Rutherford," this impressive red wine is comprised of 92% Cabernet Sauvignon with 8% Cabernet Franc, and is aged for 2 years in French oak. Look for bright raspberry and currant fruit framed by notions of graphite, mineral and earth.

596064 [XD] 750 mL $95

TABLAS CREEK VINEYARD ESPRIT DE BEAUCASTEL BLANC 2008
Paso Robles
TASTING NOTE: Tablas Creek's flagship white, the 2008 Esprit de Beaucastel Blanc, is a blend of 65% Roussanne, 30% Grenache Blanc, and 5% Picpoul. It offers up sumptuous aromas of orange marmalade, lemon blossom, and white currants along with spice, crushed rock, and subtle earthy notes. This full-bodied, rich, lively white should drink well for 4-5 years. Score: **(90-92)** (Robert Parker Jr., *www.erobertparker.com*, Aug. 2009)

735506 [XD] 750 mL $37

JOSEPH PHELPS INSIGNIA 2006
Napa Valley
TASTING NOTE: The 2006 Insignia (95% Cabernet Sauvignon and 5% Petit Verdot; 16,000 cases produced) is a superb effort in this vintage. Another 30+ year wine, it boasts a dense plum/purple color as well as abundant notes of licorice, black currants, charcoal, black olives, and graphite. Full-bodied, pure, and rich with moderately high tannins, it represents a California version of a Bordeaux from Pauillac or St.-Julien. Anticipated maturity: 2014-2045. Score: **95+** (Robert Parker Jr., *www.erobertparker.com*, Dec. 2009)

737346 [D] 1500 mL $549

DOMAINE DE LA ROMANÉE-CONTI ÉCHÉZEAUX GRAND CRU 2007
AC
TASTING NOTE: The Domaine's 2007 Echezeaux displays ripe red berry and star anise aromas; a tender fruit character, mingled with a hint of mocha and underlain by subtly saline meat stock on a silken palate, and a finish that preserves just enough of a fresh edge to its fruit to stimulate salivation and the desire for the next sip. Here is a 2007 that remains true to the personality it expressed early on in barrel, albeit with flattering textural refinement and a greater sense of purity. It's small scale, but only in the non-derogatory sense of chamber music (two words I used to describe it and, amusingly, later heard from de Villaine). I imagine this charmer being best enjoyed over the next 5-7 years. Drink: 2010-2017. Score: **90** (David Schildknecht, *www.erobertparker.com*, June 2010)

723122 [XD] 750 mL $275

For Wineries...

- Conventional or Organic?
- Why use eco-labels?
  A potentially important source of information
- What price to charge?

For Consumers...

- Conventional or Organic?

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- Higher quality $\Rightarrow$ Higher willingness-to-pay (Price)

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- Can eco-labels be used as a signal of quality to wine consumers?
- What implications does a group of (devoted) organic consumers have on:
  - the pricing equilibrium?
  - the informational role of eco-labels?

Table: Chardonnay production costs in the Sonoma County in 2004

Yield (Tons/Acre)	Conventional	Organic
9	$12,964	$14,577
8	$12,819	$14,422
7	$12,676	$14,266
6	$12,531	$14,111
5	$12,386	$13,957
4	$12,240	$13,803
3	$12,096	$13,647

Source: UC Cooperative Extension

Equilibrium Requirements

- Consumers must be willing to pay a premium for organic wines.

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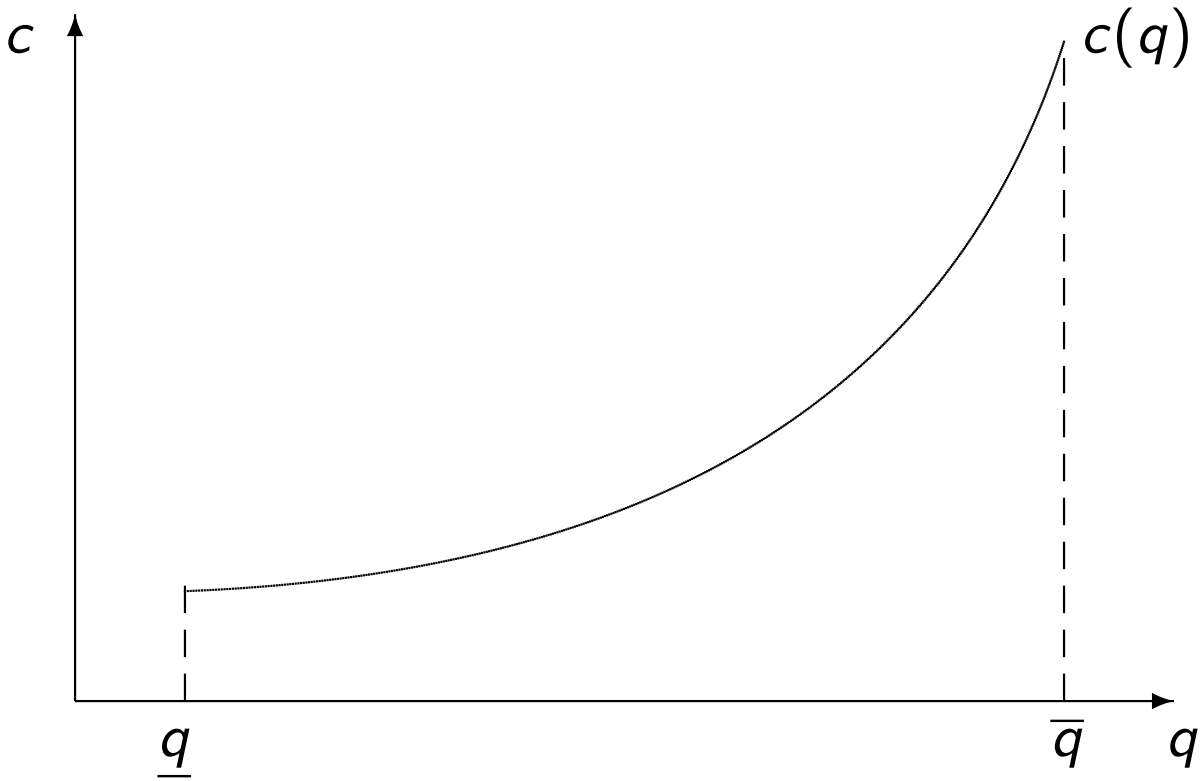
- Consumers must be willing to pay a premium for organic wines.
- There is a critical cost level so that if your costs are above, you use the conventional technology and if below, you use the organic technology.
- If such an equilibrium is to exist, then there must exist some quality level whereby the cost of producing organic wines is falling.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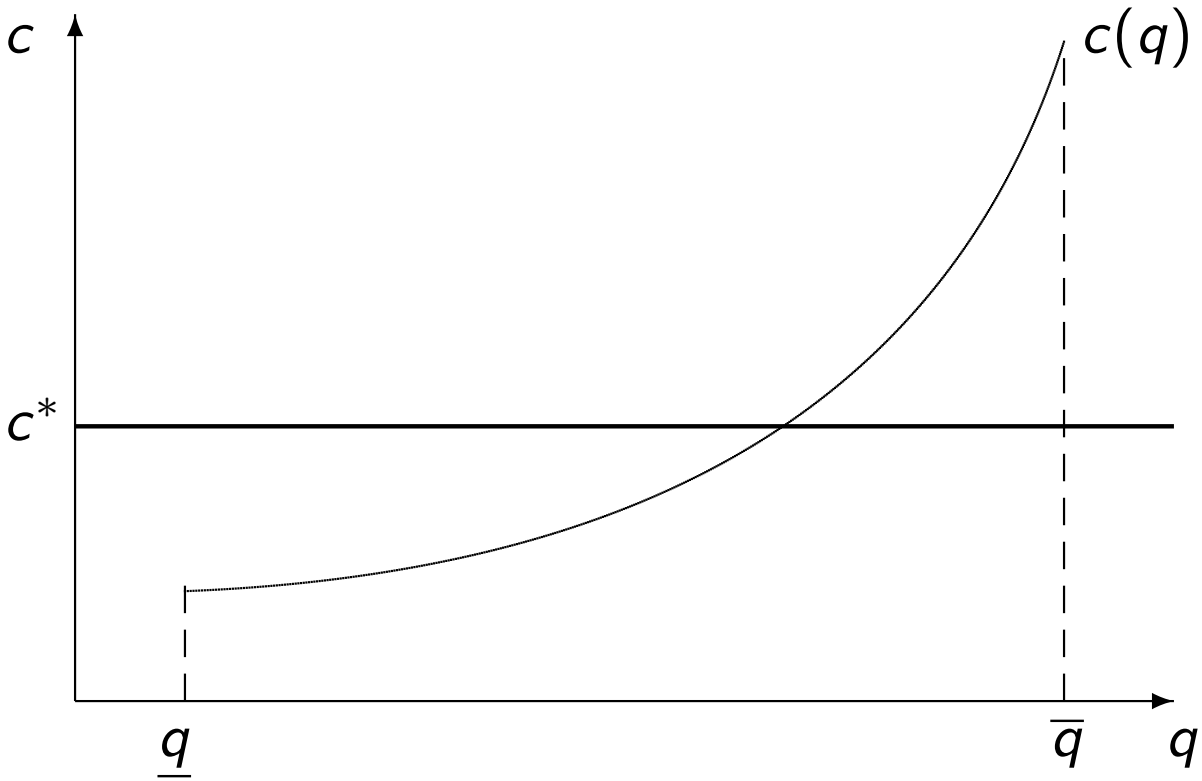
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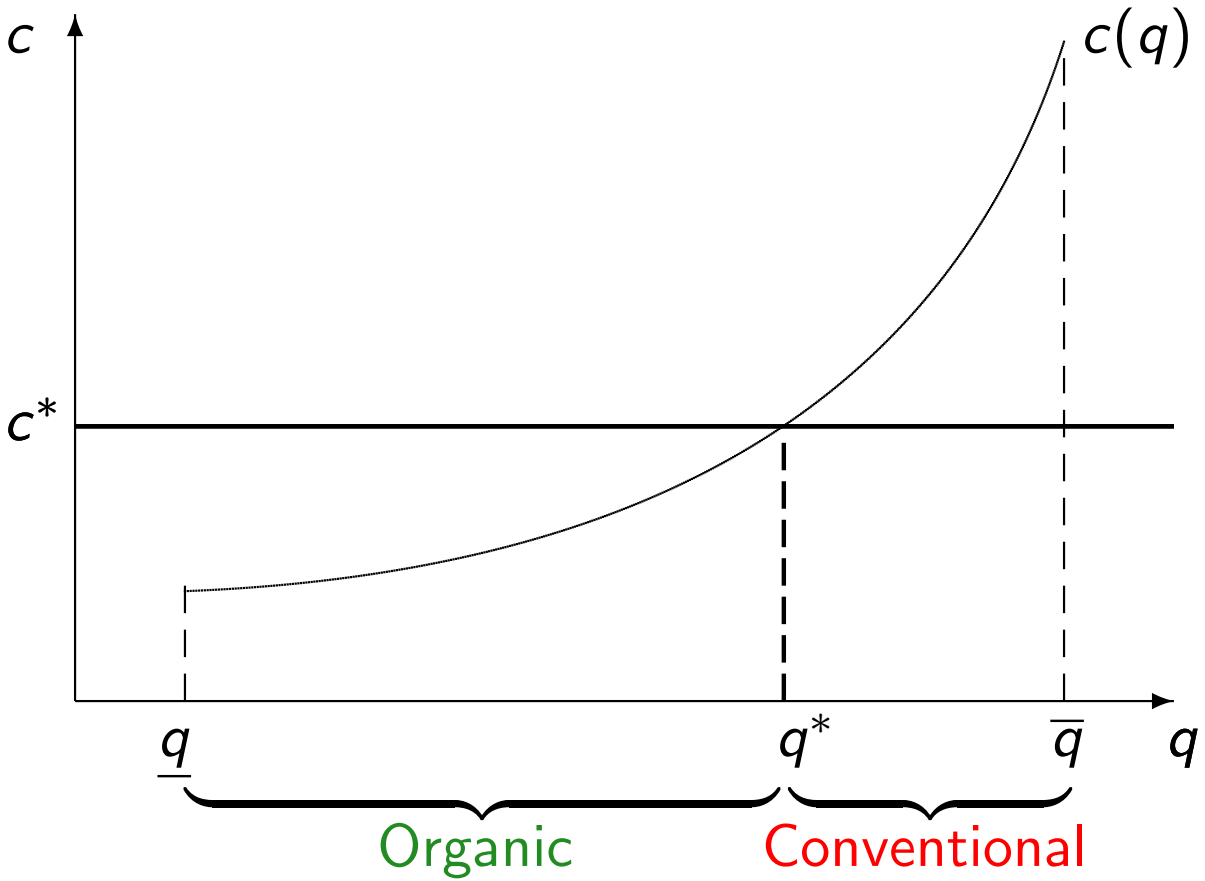
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Organic
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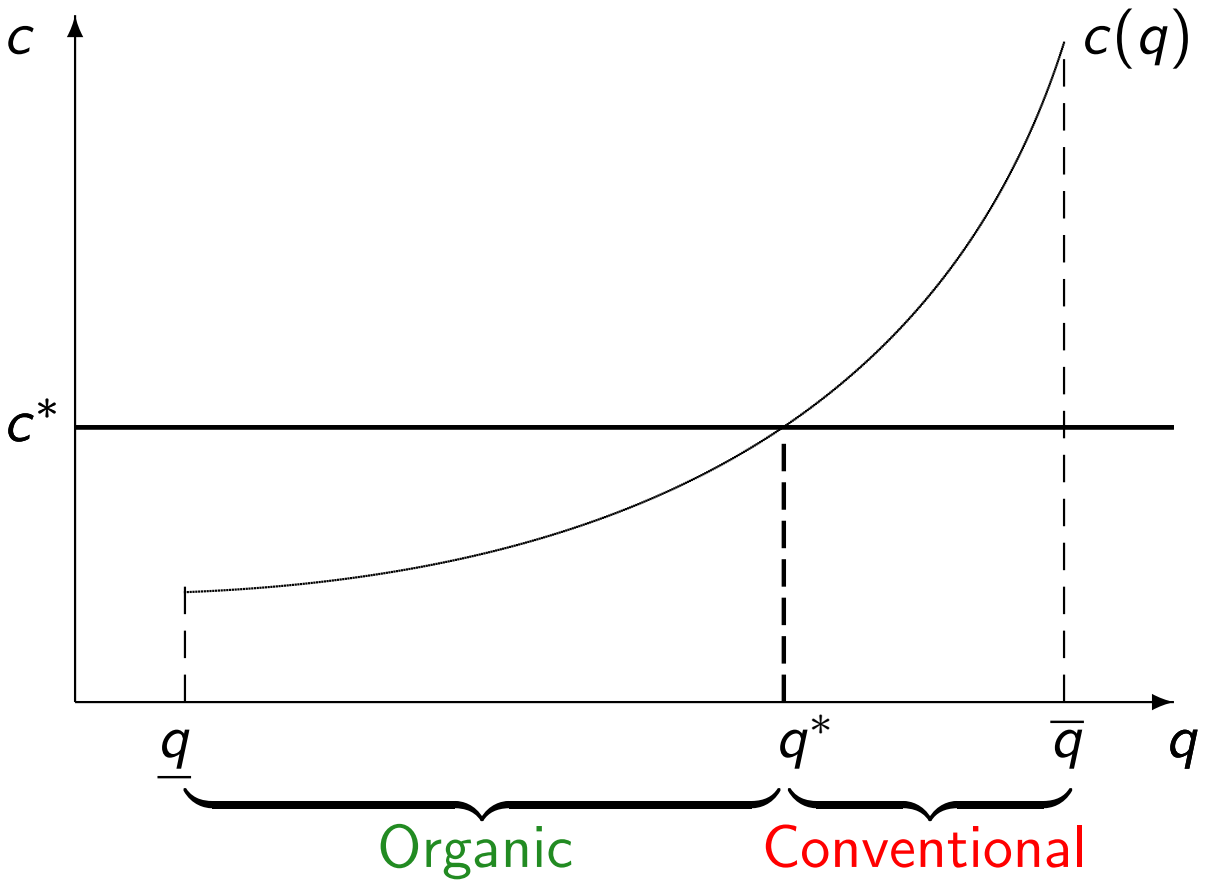


This cannot occur.

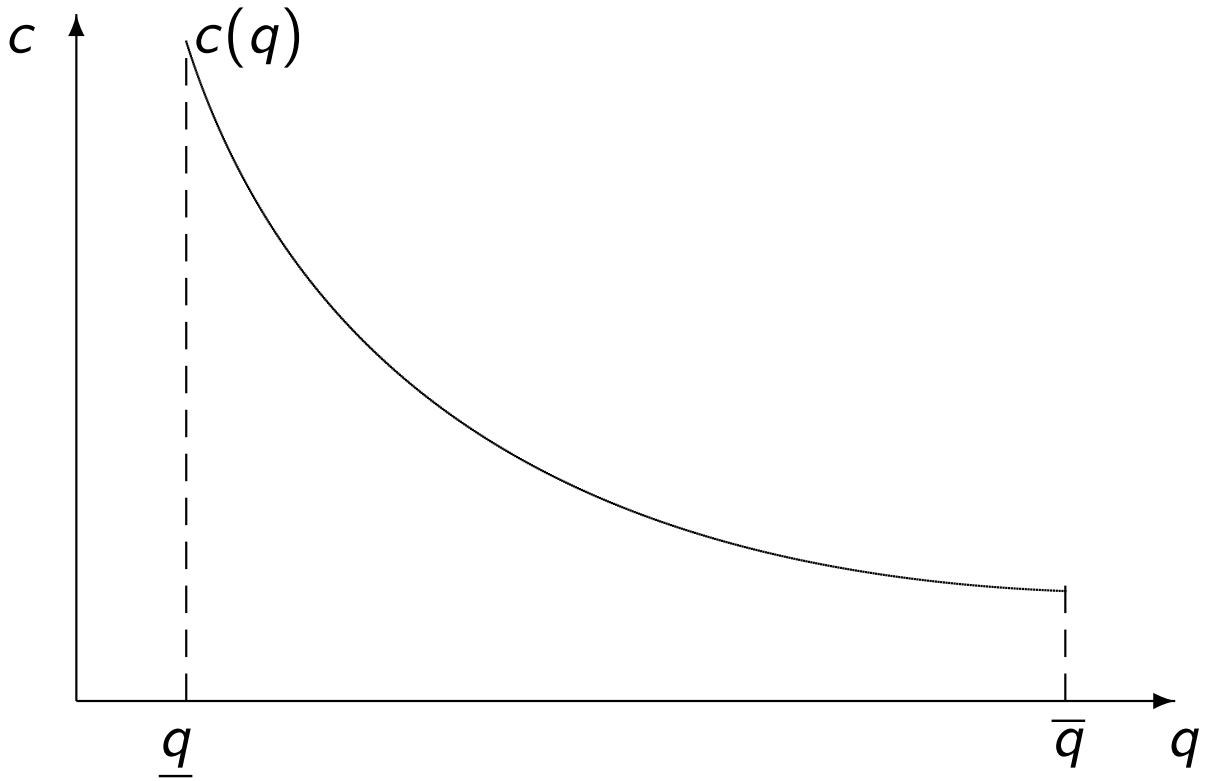
Consumers are not that stupid.

This gives us only a necessary condition (not sufficient) in terms of the classes of cost functions permissible that will support such an equilibrium.

Table: Chardonnay production costs in the Sonoma County in 2004

Yield (Tons/Acre)	Conventional	Organic	Cost Difference
9	$12,964	$14,577	$1613
8	$12,819	$14,422	$1603
7	$12,676	$14,266	$1590
6	$12,531	$14,111	$1580
5	$12,386	$13,957	$1571
4	$12,240	$13,803	$1563
3	$12,096	$13,647	$1551

Source: UC Cooperative Extension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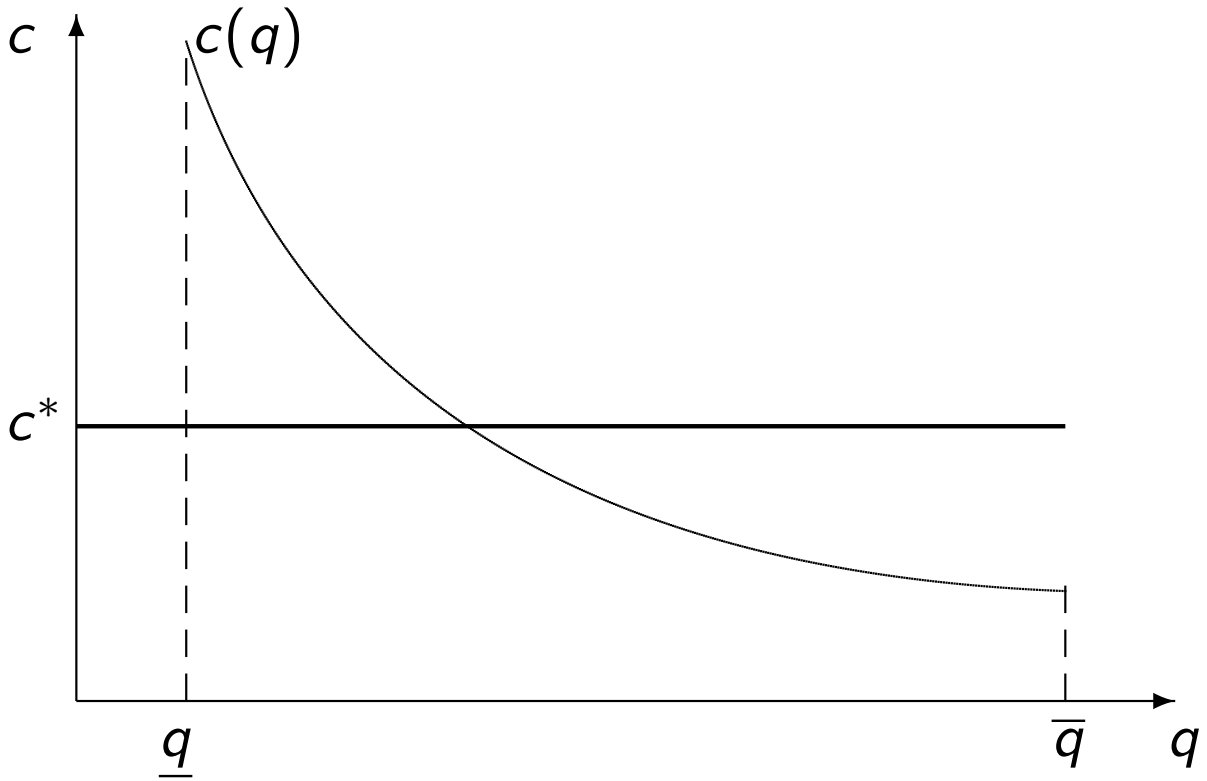
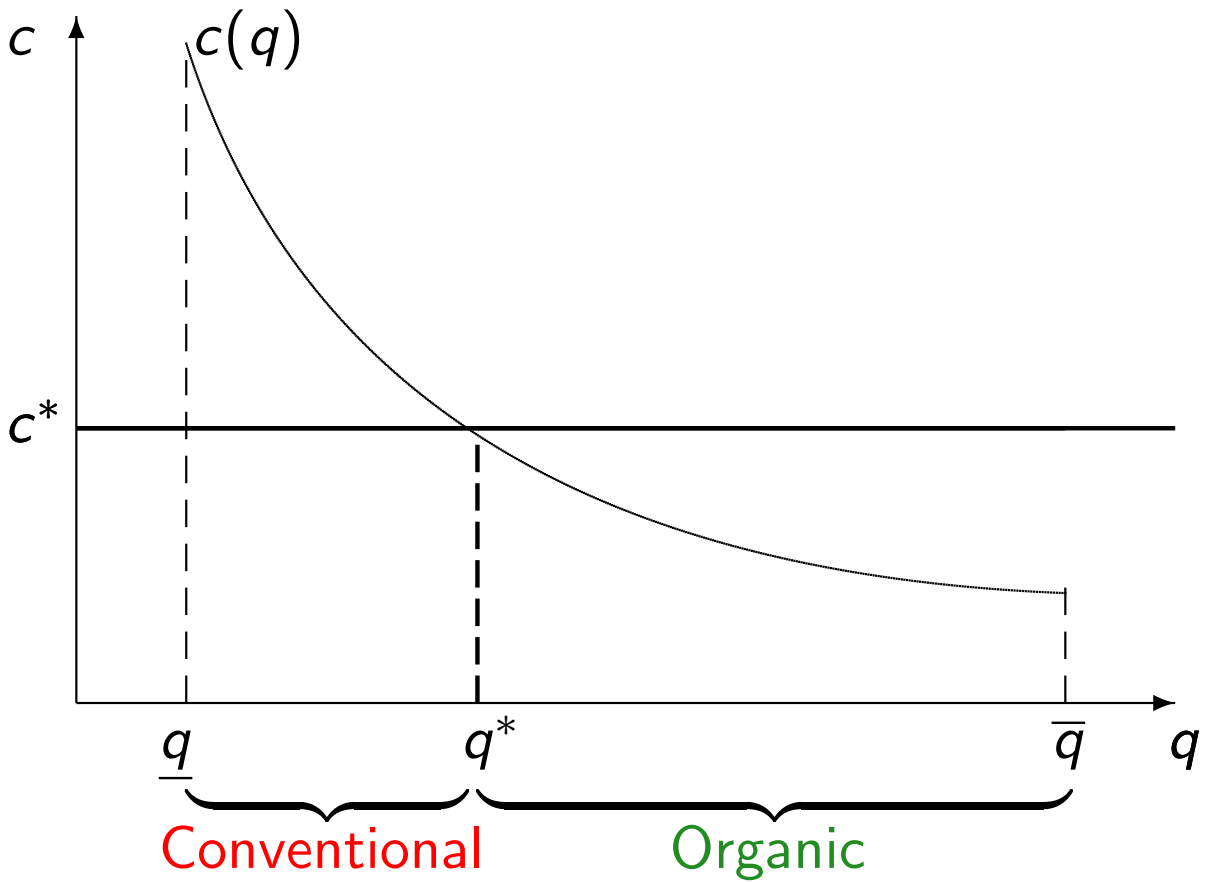
q
q̄
q


c
c(q)
c*
q
q̄
q


c
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q*
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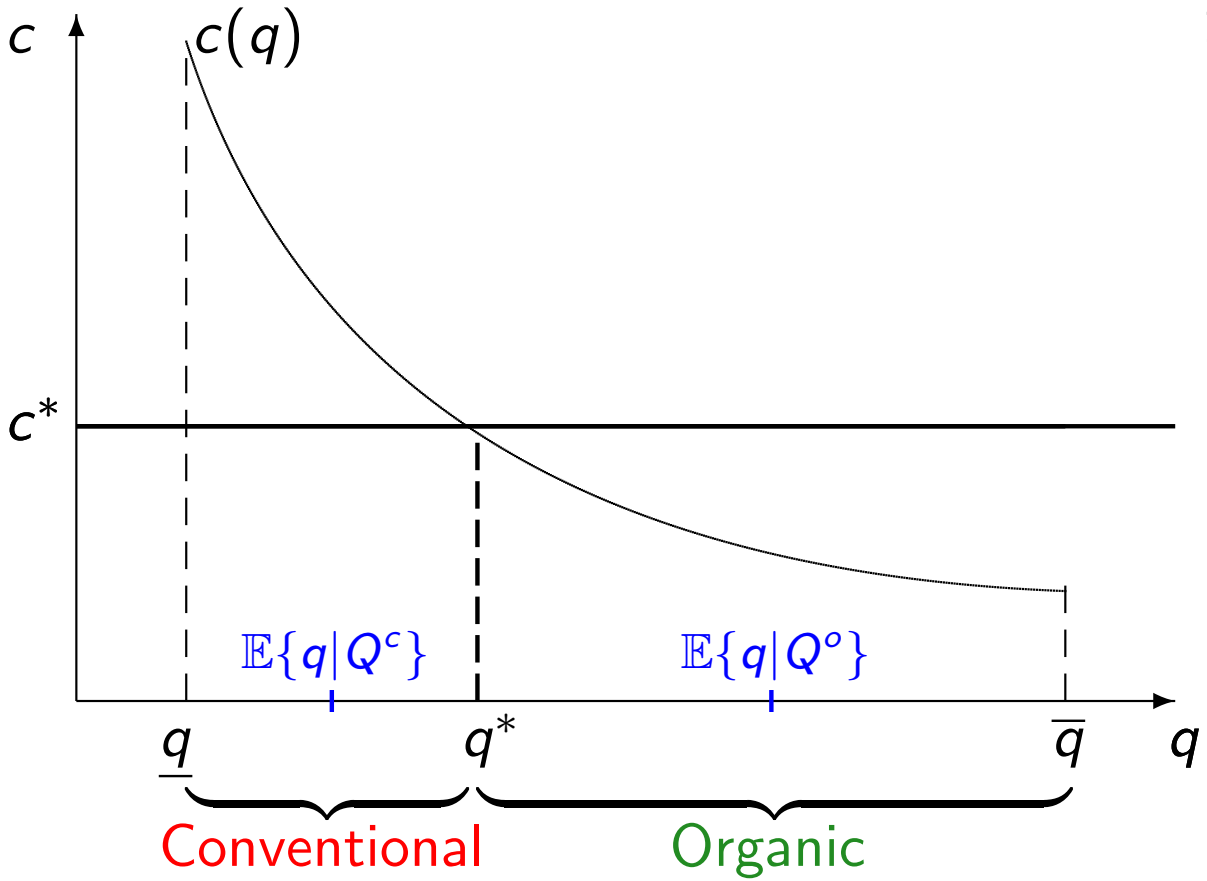
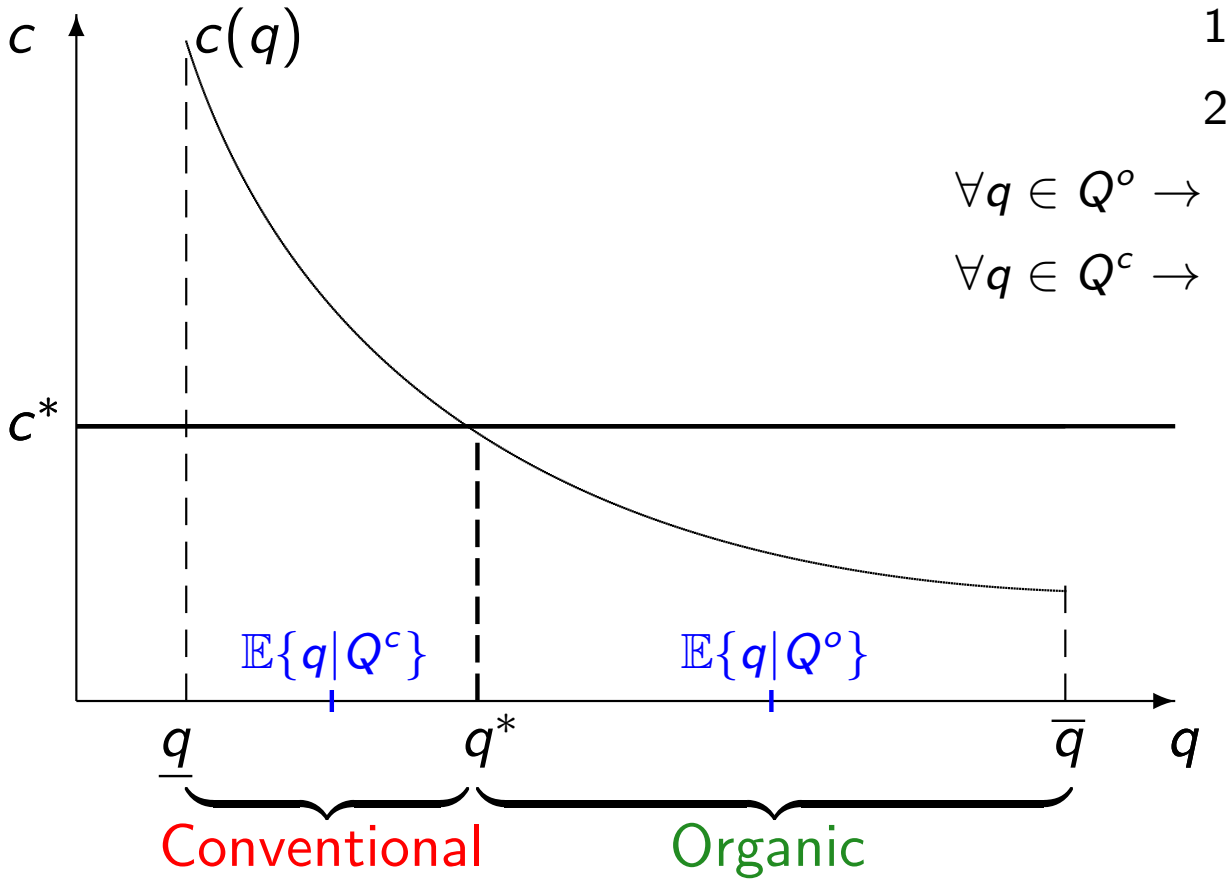
q
Conventional
Organic

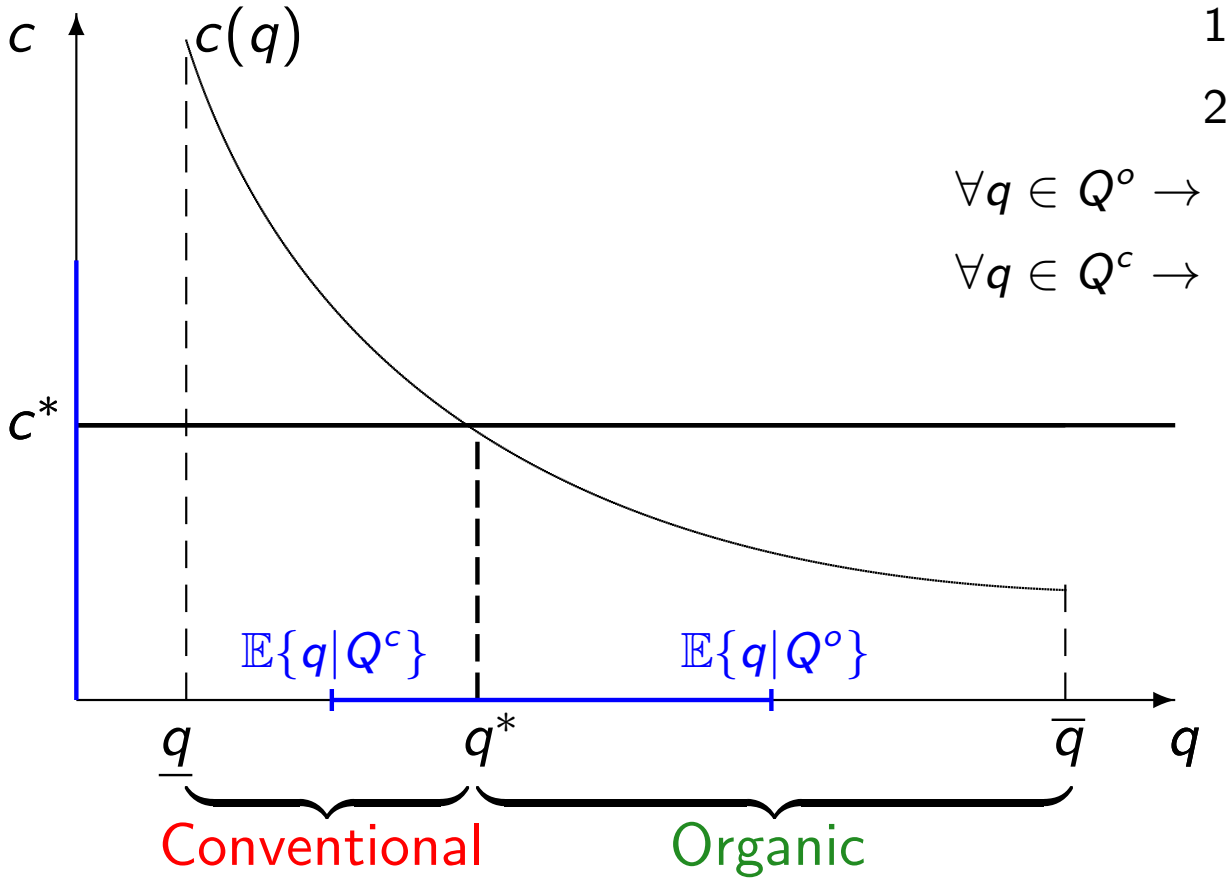


1. Construct expectations



1. Construct expectations
2. Examine IC constraints

$$\forall q \in Q^o \rightarrow \mathbb{E}\{q|Q^o\} - c(q) \geq \mathbb{E}\{q|Q^c\}$$
$$\forall q \in Q^c \rightarrow \mathbb{E}\{q|Q^c\} \geq \mathbb{E}\{q|Q^o\} - c(q)$$



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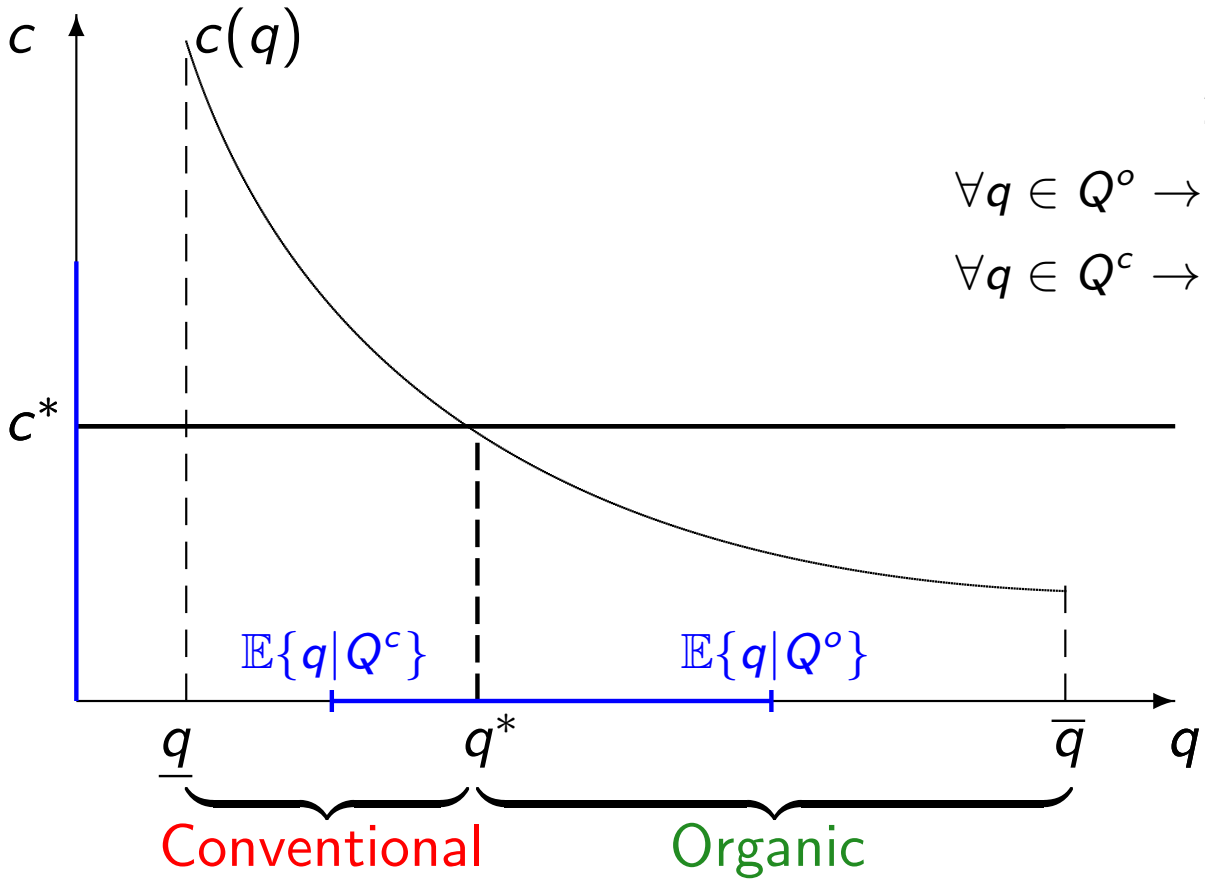
$$\forall q \in Q^c \rightarrow \mathbb{E}\{q|Q^c\} \geq \mathbb{E}\{q|Q^o\} - c(q)$$
$$\therefore c^* = \mathbb{E}\{q|Q^o\} - \mathbb{E}\{q|Q^c\}$$



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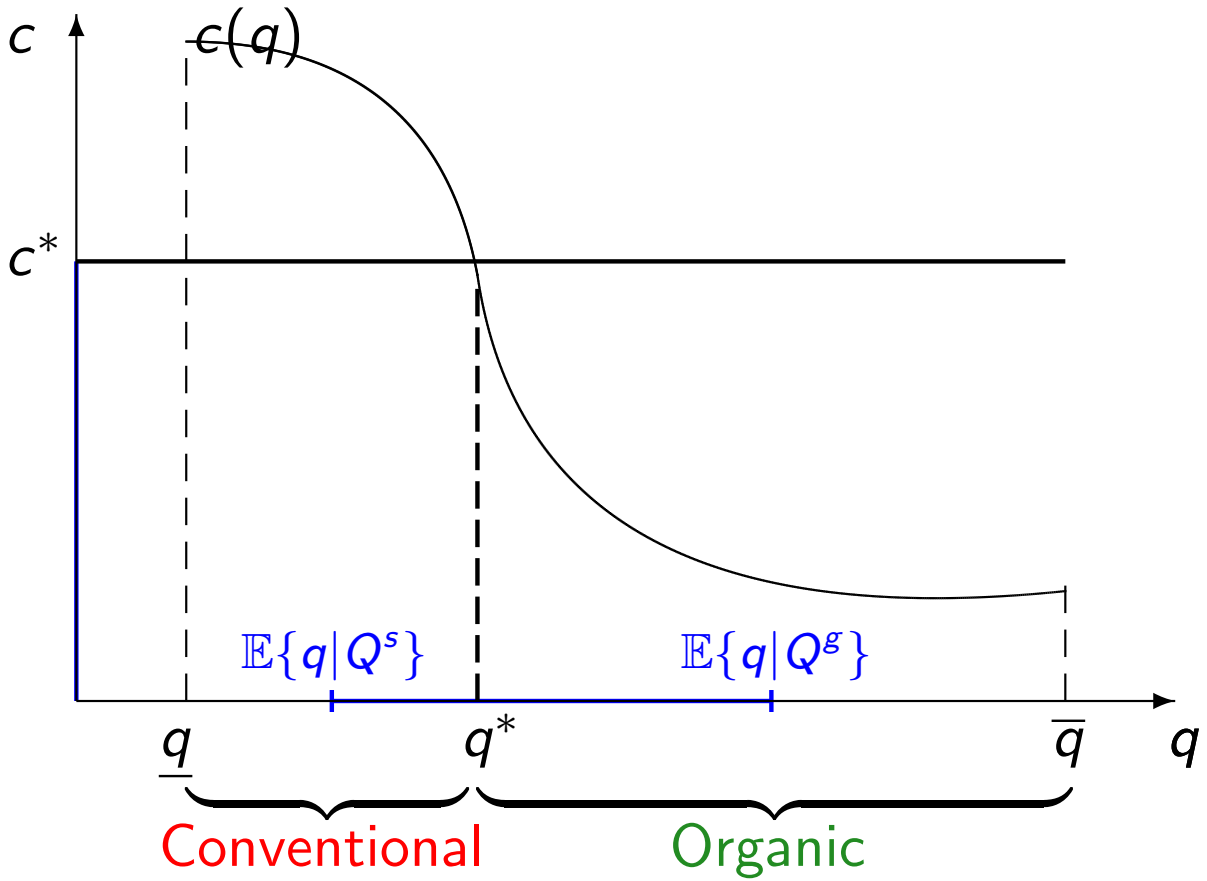
A nontrivial problem to solve especially with nonmontonic functions.


c
c(q)
c*
$\mathbb{E}\{q|Q^s\}$
$\mathbb{E}\{q|Q^g\}$
$\underline{q}$
q^*
$\overline{q}$
q
Conventional
Organic

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- A possible *terroir* argument for decreasing costs for going organic in the quality dimension.

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- A possible *terroir* argument for decreasing costs for going organic in the quality dimension.
- For market transparency, a finer partition of $\mathcal{Q}$ is desirable.
- The desirability of classification systems.
- More information on the cost of growing organically (in relation to quality).

For Consumers...

- Conventional or Organic?
- Higher quality $\Rightarrow$ Higher price
  But
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- Can eco-labels be used as a signal of quality to wine consumers?
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Consumer Heterogeneity

Sources of differentiation

1. Relevant product group:

Consumer Heterogeneity

Sources of differentiation

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   Price Driven vs. Organic Only (Devoted Ethical Consumer)

Consumer Heterogeneity

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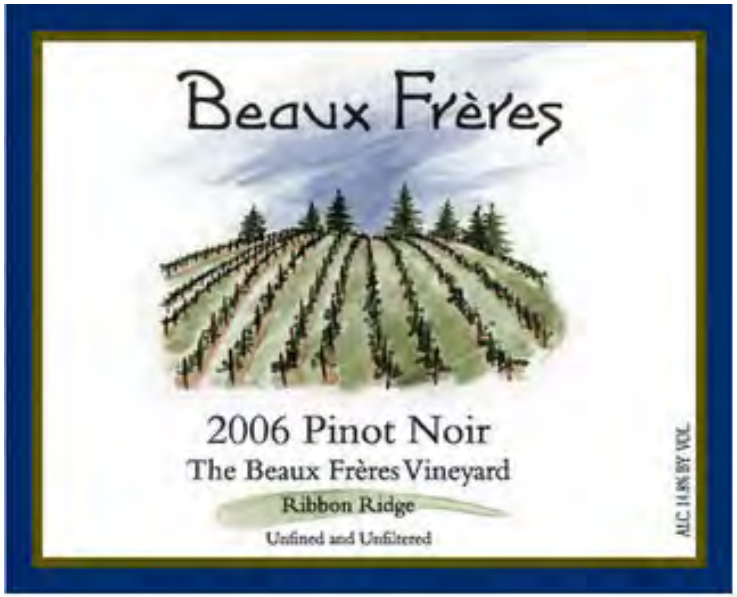
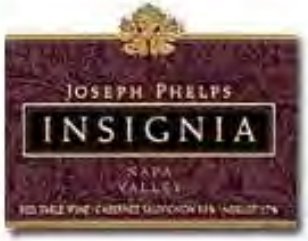
   Informed vs. Uninformed


Beaux Frères
2006 Pinot Noir
The Beaux Frères Vineyard
Ribbon Ridge
Unfined and Unfiltered
ALC 14.9% BY VOL

LE HAUT-LIEU
SEC
2007
DOMAINE HUET
VOUVRAY

CULLEN
MARGARET RIVER
Diana Madeline
Cabernet Sauvignon
Merlot
PRODUCT OF AUSTRALIA


JOSEPH PHELPS
INSIGNIA
NAPA
VALLEY

Récolte
1998
L'ERMITE
ERMITAGE
M. CHAPOUTIER
26600 TAIN (FRANCE)

SOCIÉTÉ CIVILE DU DOMAINE DE LA ROMANÉE-CONTI
PROPRIÉTAIRE A VOSNE-ROMANÉE (CÔTE-D'OR) FRANCE
ROMANÉE-CONTI
ANNÉE 1991

Preferences

Define u_i^t as the willingness-to-pay of a t type buyer consuming an i type product.

$u_c^m = u_o^m = u_o^o = r > 0$ and $u_c^o = k \leq 0$.

Consumers' Purchasing Decision

Price Driven... IF:

1. $p_i < \min\{p_j, r\}$
   $\Rightarrow$ buy from firm i
2. $p_i = p_j \leq r$
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Organic Only

1. Informed - Buy lowest priced organic product (if it exists)

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Organic Only

1. Informed - Buy lowest priced organic product (if it exists)
2. Uninformed - Buy lowest priced organic product with an eco-label (if it exists)

Timing

1. Firms simultaneously choose production technology; Conventional or Organic
2. Technological choices are observed by the firms (not by the consumers)
3. Firms simultaneously choose:
   - Eco-Label or not
   - Price
4. Label and Price observed by consumers and purchasing decisions made
5. Markets clear

The strategic role of eco-labels

The strategic role of eco-labels

Irrelevant!

Who cares??

Symmetric Choice

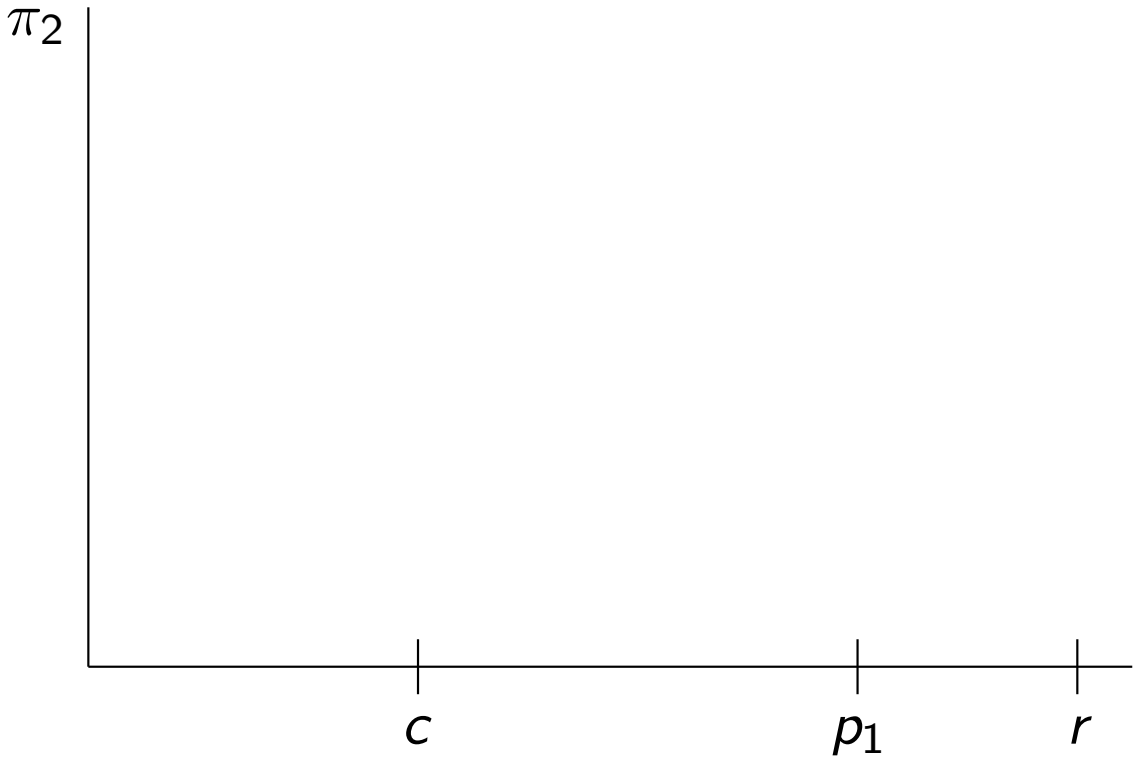
Proposition 1

If both firms choose the same production technology, then the unique equilibrium of the pricing stage is a zero profit outcome.

In these symmetric choice outcomes, nothing distinguishes the two firms. Therefore, standard Bertrand price competition prevails.

Asymmetric Choice

Suppose firm 1 is conventional and firm 2 is organic. Fix $p_1 \in (c, r)$.



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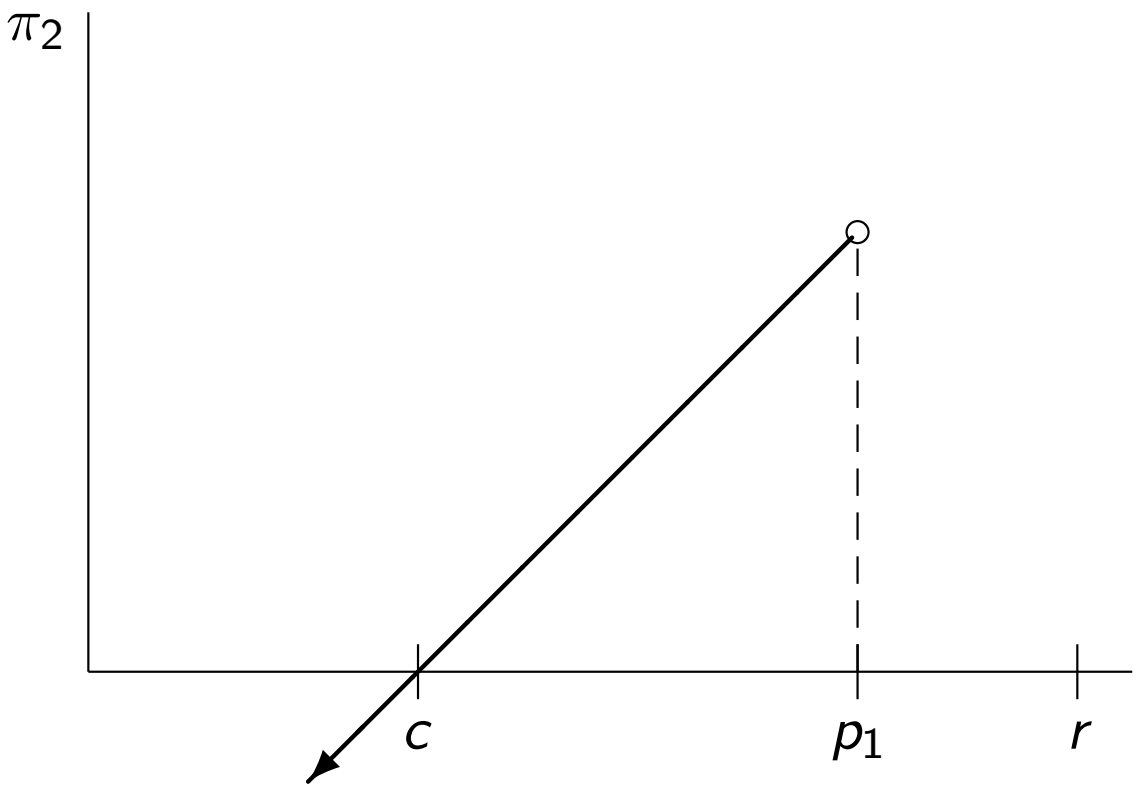

If $p_2 < p_1$ then

$$\pi_2 = (p_2 - c)$$

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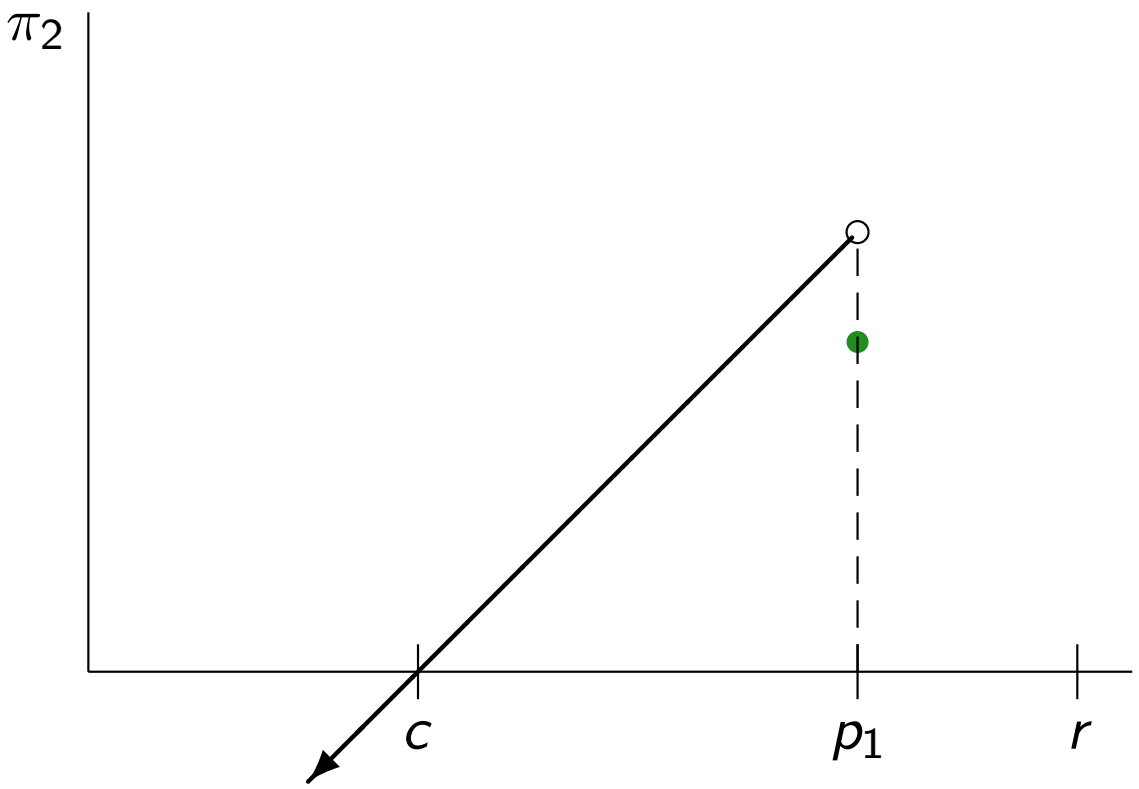

If $p_2 = p_1$ then

$$\pi_2 = \overbrace{(1-\alpha)(p_2-c)}^{\text{Organic Only}} + \underbrace{(\alpha/2)(p_2-c)}_{\text{Mainstreamers}}$$

$$= \underbrace{\left(\frac{2-\alpha}{2}\right)}(p_2-c)$$

$$> \frac{1}{2}$$

Asymmetric Choice

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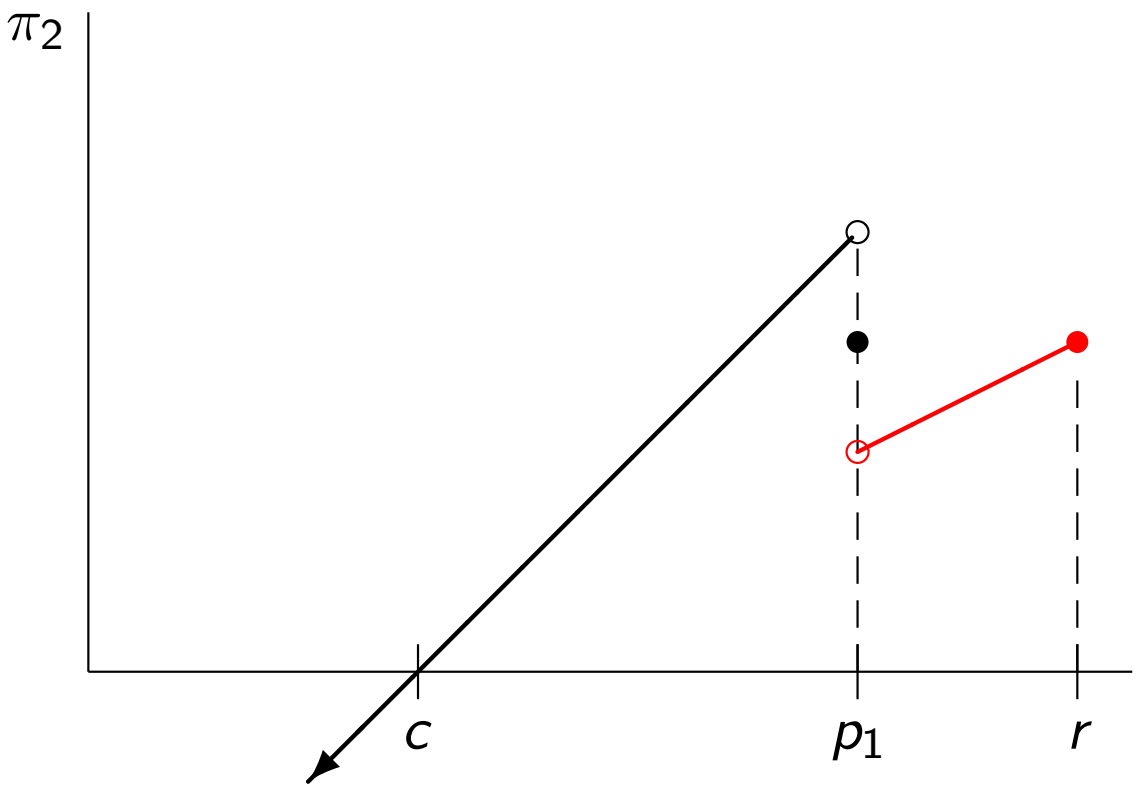


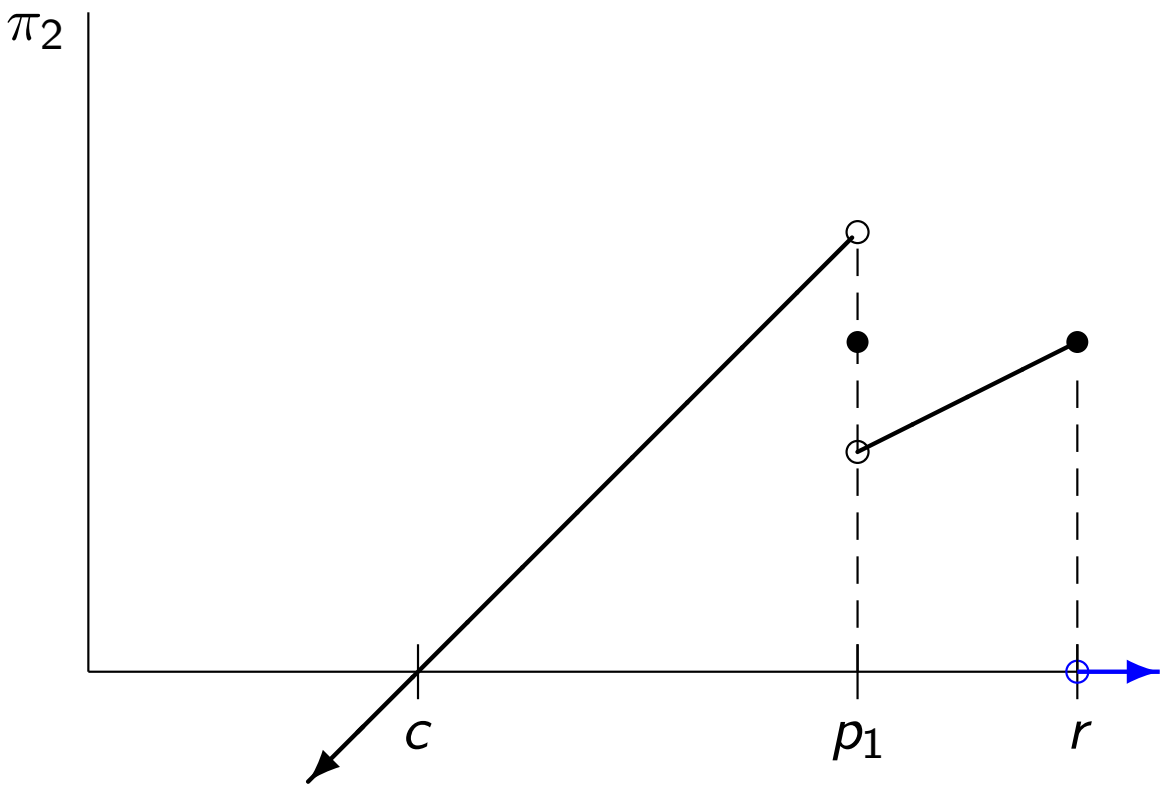
If $p_2 \in (p_1, r]$ then

$$\pi_2 = (1 - \alpha)(p_2 - c)$$

Asymmetric Choice

Suppose firm 1 is conventional and firm 2 is organic. Fix $p_1 \in (c, r)$.

If $p_2 > r$ then $\pi_2 = 0$



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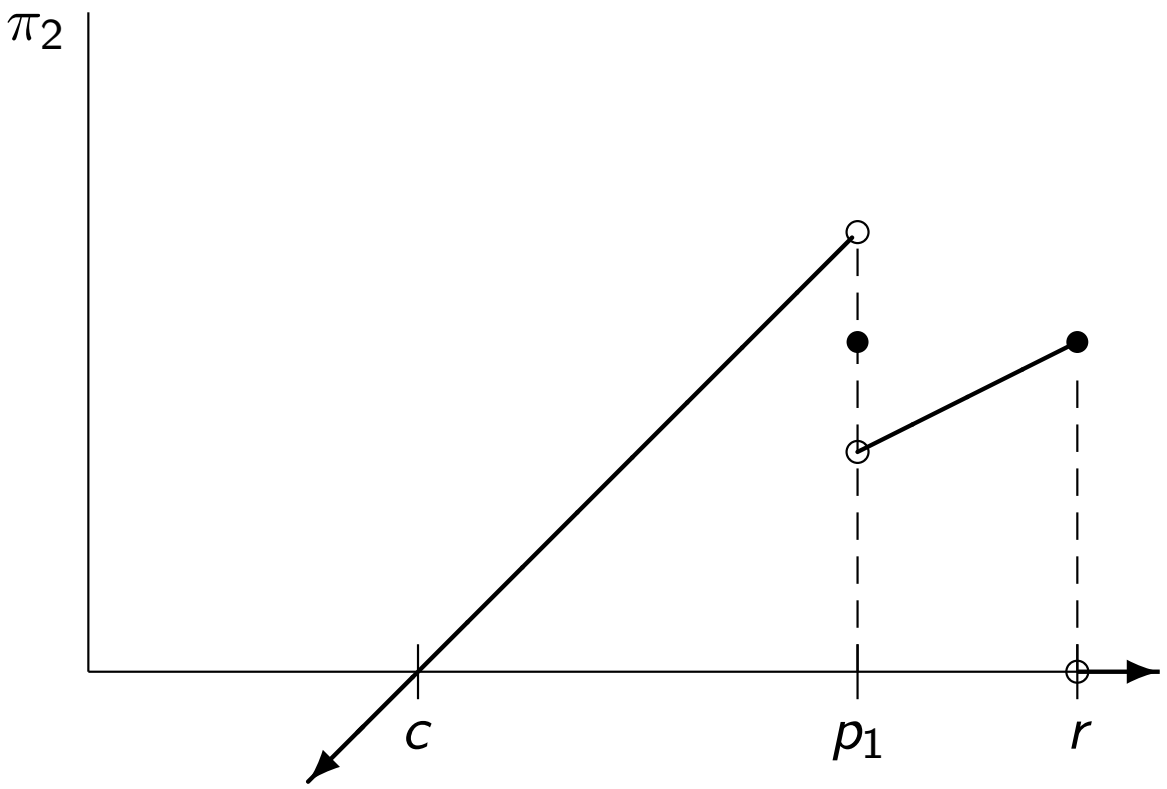

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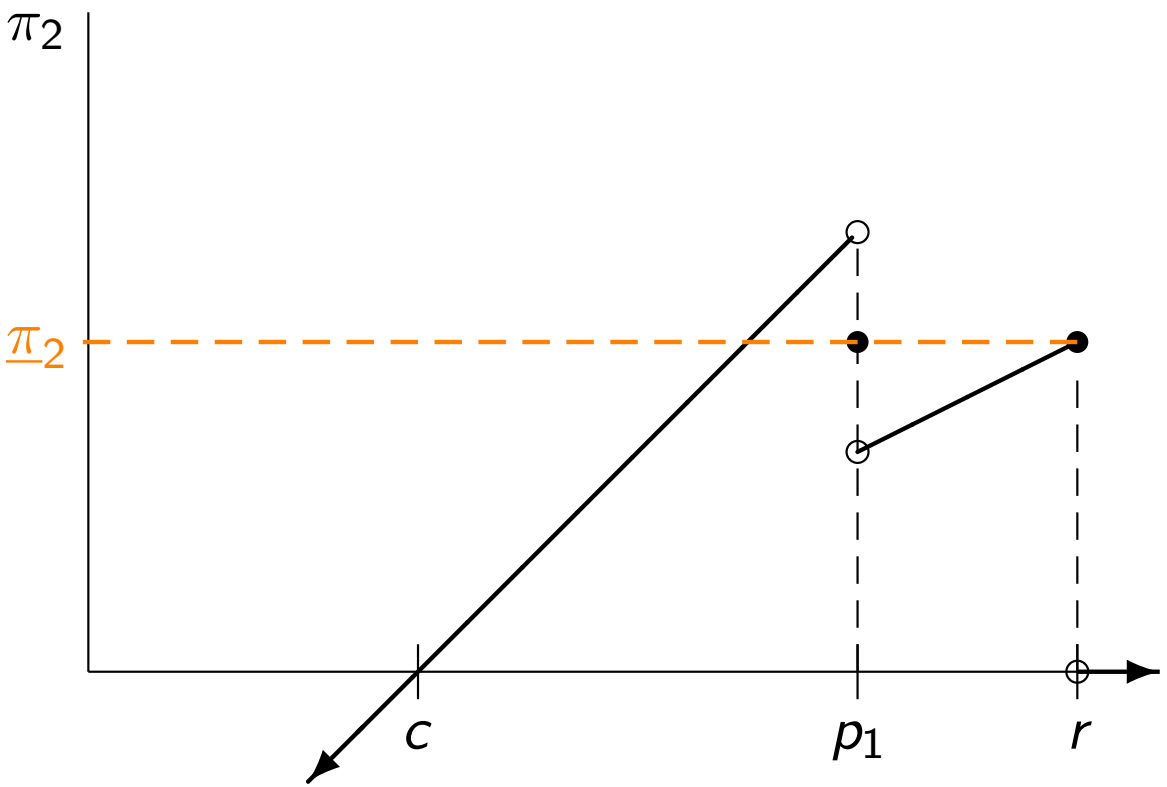

Lowest p_2?

Examine π_2

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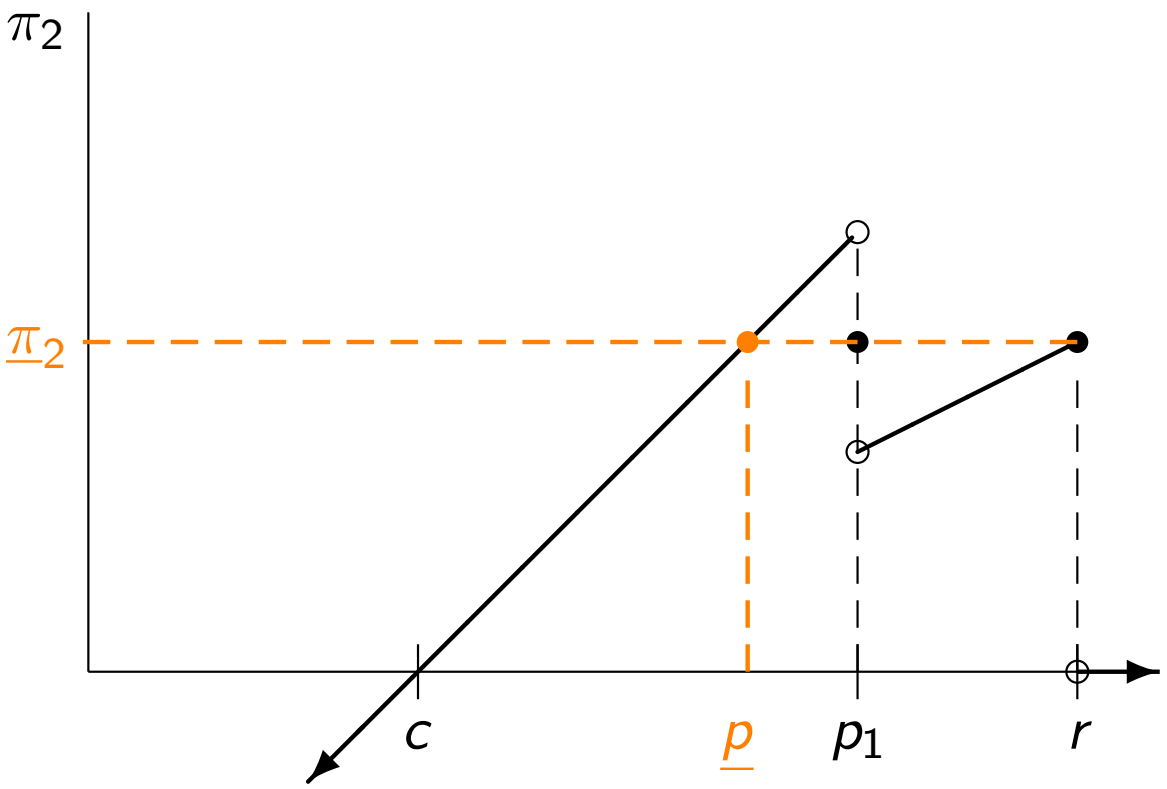

Lowest p_2?

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Determine $\underline{p}$

Equilibrium

Proposition 2

The set of pure strategy SPNE is summarized by the first period behavioral strategy profile of (o, c) *and* (c, o).

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$\Rightarrow$ first-order stochastic dominance $\Rightarrow \mathbb{E}(p_o) > \mathbb{E}(p_c)$.

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4. Consumer informativeness is unimportant in the current setting.

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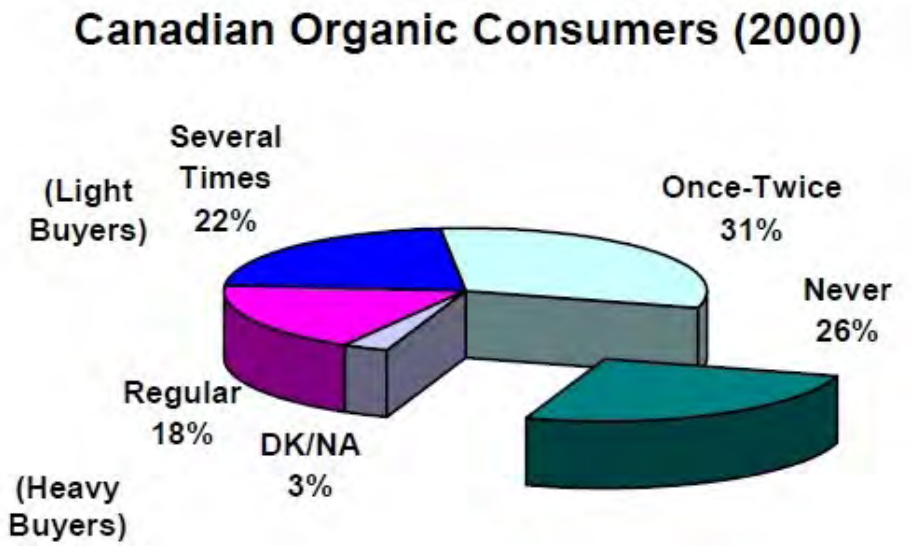
   - Introduce naive "conventional only" (i.e., anti-organic) consumers into the problem.



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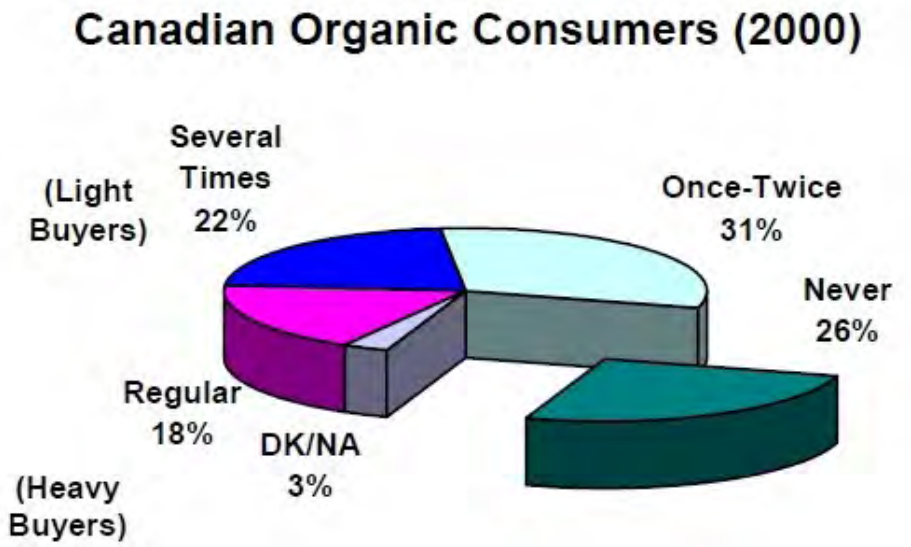

2. In an environment where eco-labels have a strategic effect, the social cost of certification.

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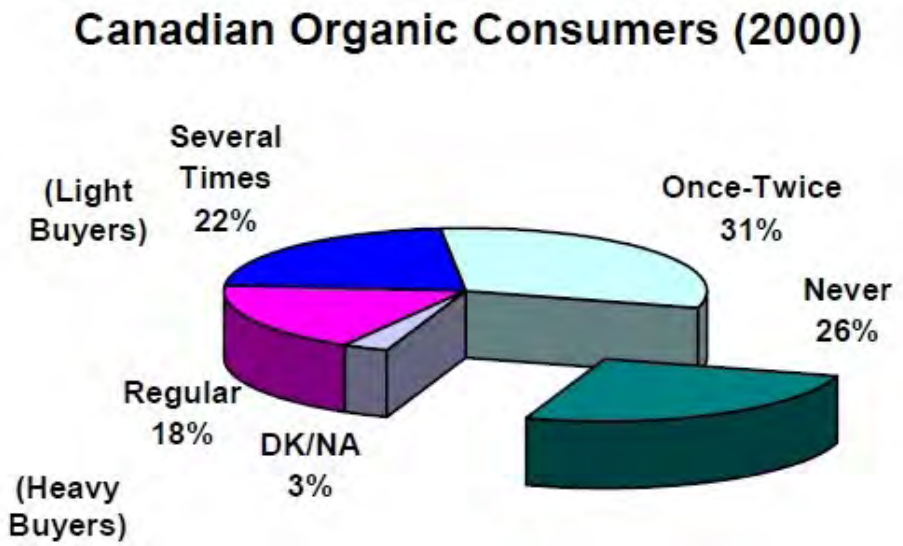

2. In an environment where eco-labels have a strategic effect, the social cost of certification.
   - Who should be encouraged (on a cost basis) to go organic and who should be deterred.