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International Drug Price Comparisons Review of Pharmaceutical Price Regulation: National Policies Versus Global Interests

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I. DRUG PRICE EACH COUNTRIES

Translational pharmaceutical industry implies potential maximize stockholder equity. Even though drug regulation is getting stricter, the regulation cannot control the total drug expenditures as seen in the empirical evidence. Making balance between controlling health care spending and maintaining motivations for novel R&D would improve health and quality of life. The regulation of each country reveals a synergistic interaction between costs, pricing, spending, R&D, productivities, and trading in global economies. The international competitors focus on their exchange rates instead of regulation concern and consumer's purchasing powers.

II. DRUG COST AND PRICES IN THE UNITED STATES

Drug prices are regulated in each country. For instance, President Clinton's Health Security Act regulates that market driven control by managed drug benefit programs become rigid in private insurance plans. Each country faces strategies with gathering global drug budgets, controlling drug volume, and total spending.

III. THE ECONOMICS OF PHARMACEUTICAL COSTS AND PRICING IN THE UNITED STATES

The R&D costs per NCEs brought to market in the United States was $59 million before taxes, and $194 million after taxes in 1993.On the drugs ranked by the FDA, higher input costs are utilized mainly for innovations. The R&D share of total costs, which includes joint costs, and increasing the issues on drug prices by global users. Production and distribution accompanies significant costs to serve several countries. The capital costs of each plant and distribution network cannot be accounted for precisely in products sold in that country. The issues of pricing on present costs and the profit maximization strategies are exist.

A. Patents as Means of Recouping R&D Costs

Patent protection extended to 20 years for drug patents as opposed to those issued before 1984, which expired 17 years from the filing. (Sibbald.B, 2001). The patent protections ensure that innovators have adequate income from their efforts. Innovators can add prices onto marginal costs.

B. The Economics and Politics of Drug Price Regulation

Drug prices are attributed to government regulations and relevant insurance for outpatients' drugs. Many pharmacists tend to prescribe drugs for financial gain, thus they prefer to have patients visit more often. Consequently, they reimburse costs on a fee-for-service. "Moral Hazard Effects", which address over-utilization of insurance covers, and create a limit of insurance coverage. The economic theory designates that the obstacle of "moral hazard" applies to the case of consumers who paid for long-run interests and overuse of insurance because it extends their premium.

C. Optimal Pricing to Share Joint Costs

Ramsey pricing is charging all users high, inelastic prices with relevant, elastic consumer demands. For instance is since the demand is inelastic, firms can price at an arbitrary level. The consumer's purchasing power is based on income, and third-party payers on reliable medical care systems, conveniences, and possibility of the risks.

Table 1 The Cost Structure of Pharmaceuticals: discounted present value at launch (percentage of total cost after tax)

Cost Component	Tax Assumptions: 46% corporate tax	Tax Assumptions: 46% corporate tax, plus R&D and possessions tax credits
Total R&D cost	31.1	29.7
R&D	29.0	27.6
Ongoing R&D costs	2.1	2.1
Total manufacturing cost	28.2	28.7
Manufacturing and distribution	25.3	25.8
Capital expenditure (plant and equipment)	2.9	2.9
Other		
Marketing costs	23.4	23.9
General and administrative costs	11.5	11.7
Working capital	3.3	3.4
Value of inventory	2.4	2.6
Total	100	100

NOTE: Assumes 10 percent cost of capital.
SOURCE: Data from OTA (1993).

46% Corporate tax of Total R&D cost are 34.4%, 46% corporate tax plus R&D and possessions tax credits are 29.7%, which imply R&D and possessions tax credits are deducted 4.7% .

IV. Regulation of Pharmaceutical Prices and Expenditures

Drug price regulation controls the public spending on drugs that social insurance programs cover outpatient drugs with limits. The government also controls volume and total expenditures, which are getting stricter due to failing control of overall drug spending. The second object of price regulation in some countries contributes to regulating mission statements, investments, and international competitors.

A. Forms of Price Regulation, managed health care in U.S firms

U.S. firms invented more than 40 % of novel drugs in the last three decades. The Health Security Act regulates drug prices in the U.S. The U.S. drug companies, the ratio of R&D to sales is likely 18% higher than other industries. Regarding unregulated drug prices, only 50% of retail prescription drug expenditures were paid out-of pocket in 1994. HMO members must receive their medical treatment from physicians and facilities within the HMO network. Pharmaceutical benefits management (PBMs) is reducing drug expenditure by 30%. The drug usage review uses on-line information systems.

B. The Form of Price Regulation in Italy

Adjusts domestic drug prices to international drug prices. The price regulation framework is granted on domestic drug productions, and pricing high costs on the domestic products. Italy demands that prices of new products and price changes of existing products be confirmed if they can utilize the social reimbursement system. Wholesale and retail distribution margins are regulated. Across-the-board price cuts are obligated. Italy has used this system since 1993. The insurance system in Italy increased patient copayment in 1993. Consequently, a 50% copayment applies to drug prescriptions.

C. The Form of Price Regulation in Spain

The form of price regulation, social reimbursement system, and regulation of wholesale and retail distributions margins in Spain are same as Italy. Across-the-board price cuts are obligated.

D. The Form of Price Regulation and manufacturer Specific Budgets in France

The form of price regulation and regulation of wholesale and retail distributions margins in France are same as Italy. France prices high on domestic products. Patient copayments under social security system cover up to 70%, depending on the classification of drugs. A 1994 French accord between government and industry allows the manufactures to have more pricing freedom. The regulation reduces productivity. France introduced a new control system of company-specific revenue constraints.

E. Form of Price Regulation in Canada

Adjusting domestic drug prices to international drug prices. Innovative drugs are priced to the median of price over all other countries. Prices are tied up with existing prices from the current market, and cannot be priced over the price index.

F. Reference Price Limits on Reimbursement, physician drug budgets and The Consequences Reference Prices Systems on Drug Spending in Germany

Reference price reimbursement systems exist. German physicians have to prove the necessity of treatment to governments. Demand inelasticity occurs on the price below the manufacturer price and the reference prices by government regulations do not affect volumes. GPs are selected to become fundholders, who are paid a capitation, including drugs. Germany is increasing their co-payments of insurances. The Consequences Reference Prices Systems on Drug Spending such as Phase I, Phase II, and Phase III.

G. Reference Price Limits on Reimbursement in the Netherlands, Denmark, Canada

The government or insurer sets a single reimbursement price for all products. In the Netherlands, physicians hold 20% of the margin between the reference prices and wholesale prices. They can switch patients to lower-priced generics and parallel imports.

Table 2 Average Foreign-to-Canadian Price Ratios

Average Foreign-to-Canadian price ratios in the United State are 0.63, Net revenue are 653.6% low which indicate the United State has flat sales.

I. The Japanese system of drug reimbursements

Adjusts domestic drug prices to international drug prices. Japan is the 2nd largest drug market. The Japanese system considers regulation and competition. Ordinary, Japanese physicians prescribe the drugs and prescription. All medical expenditures are reimbursed by the social insurance program, which contains profit or is nationalized. Every two years the government conducts a survey to see how the manufacture prices charge and reduce the reimbursement costs. Physicians earn one-third of their income by prescribing because patients can utilize health services with low costs, which increases the number of patient visits. Only adds charging for new drugs under the Japanese drug regulations induced by the number of new drug entries, which reduces the number of R&D on current products.

J. The Rate of Return Regulation in the United Kingdom

Rate of return regulation is known as creating maximize reimbursement and allocating adequate resource utilization. The United Kingdom regulates the rate of return on capital in the country. The U.K. Pharmaceutical Price Regulation Scheme (PPRS) exist. Reimbursement prices of off-patent drugs sell. Regulation for allocation of costs between the NHS and exports regulate.

K. Physician Drug Budgets and Patient Copayments in the U.K.

The pharmaceutical price regulation scheme is successful in controlling drug spending.
Nominal meaning of "indicative budgets" with no financial sanctions for overruns. The insurance system of the U.K. provides patient prescription charges. Those which reach more than 80% of sales are exempt, including prescribed OTC drug's reimbursement.

L. The Form Price Regulation in Developing Countries

Sparsely-distributed regulations regulate. Consumers in a low-price country are having difficulty to purchase import drugs because they are faced with higher prices by parallel trades.

M. Reference Price Limits on Reimbursement in New Zealand

There are following robust competitors' strategies. The government or insurer sets a single reimbursement price for all products.

Figure 1.Pharmaceutical Expenditures as a Share of GDP 2006

GDP of the United States in 2006 is 1.9%, GDP of the Canada is 1.7%. The Unites State's GDP is 0.2% higher than Canada, which relates to drug sales.

V. Effects of Regulation on Drug Prices and Expenditures

-Price index

Statistical average of prices for a given class of goods or services in a given region, during an interval of time.

-Gerschenkron Effect

Aggregation methods utilize a reference price structure or volume structure to compare countries, changing the base year for an index determines the growth rate of index. i.e., Table 3 as follow. Law of demand "If the price of the good increases, the quantity demanded decreases, while if price of the good decreases, its quantity demanded increases."

Table 3 Price Indexes in selected countries, relative to the United States, 1992 (all single-molecule drugs, matched by MOL/ATC, out patient pharmacy)

Country	*Laspeyres-KG*	*Laspeyres-SU*	*Paasche-KG*	*Paasche-SU*	
United States	1.000	1.000	1.000	1.000	922
Canada	0.870	1.030	0.664	0.447	458
Germany	0.972	1.273	0.521	0.368	471
France	0.570	0.701	0.416	0.326	412
Italy;	0.739	0.907	0.331	0.465	406
Japan	1.282	0.923	0.486	0.448	396
Switzerland	1.049	1.444	0.657	0.465	308
Sweden	0.811	1.089	0.566	0.370	261
United Kingdom	0.678	0.761	0.479	0.465	453

NOTES: Laspeyres = U.S. weights
Paasche = foreign weights
SU = price per standard unit
KG = price per kilogram
SOURCE: Danzon and Kim (1995), using IMS data.

When the United States was set as a milestone of Laspeyres Index and Paasche Index, only the Laspeyres KG in Japan is 0.049 high.

-Consumer Price Index

Table 4 Prescription drugs in the United Sates

2004	2005	2006	2007
337.1	349.0	363.9	369.2

・**1982−84 = 100, except as noted. Annual averages of monthly figures.**

・All indexes previously expressed on a base of 1967 = 100, or any other base through December 1981, have been rebased to 1982−84 = 100. The expenditure weights are based upon data tabulated from the Consumer Expenditure Surveys.

・*CPIs for two population groups: (1) a CPI for all urban consumers (CPI-U), which covers approximately 80 percent of the total population; and (2) a CPI for urban wage earners and clerical workers (CPI-W), which covers 32 percent of the total population.*

(The U.S bureau of labor statistics 2009)

The Prescription drugs in the United Sates was increasing 32.1% for three years.

Table 5 Import Price Index Pharmaceutical Products

2004	2005	2006	2007
106.9	111.0	106.5	107.6

・2000 = 100. As of June. Indexes are weighted by the 2000 Tariff Schedule of the United States Annotated, a scheme for describing and reporting product composition and value of U.S. imports. Import prices are based on U.S. dollar prices paid by importer by the US Bureau, 2009

・The goods data are a complete enumeration of documents collected by the U.S. Bureau of Customs and Border Protection and are not subject to sampling errors; but they are subject to several types of non- sampling errors. Quality assurance pro- cedures are performed at every stage of collection, processing and tabulation; Data Collection and Imputation Proce- dures: Statistical copies of import entry documents, received on a daily basis from ports of entry throughout the country, are subjected to a monthly pro- cessing cycle. They are fully processed to the extent they reflect items valued at $2,001 and over or items which must be reported on formal entries.

(The U.S bureau of labor statistics 2009)

The import Price Index Pharmaceutical Products are increasing 0.7% gradually for three years.

Table 6 The U.S. Product Price Index Pharmaceutical Preparation Manufacturing

2004	2005	2006	2007
360.1	378.7	397.9	413.8

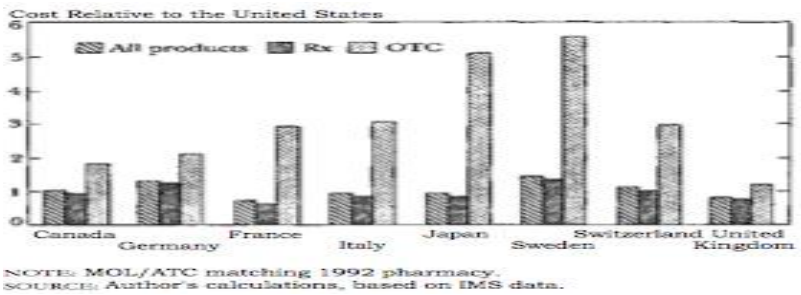
・1982 = 100, except as indicated. By US bureau 2009.

・Type of Data Collection Operation: Probability sample of approximately 30,000 establishments that result in about 100,000 price quotations per month the survey are selected using statistical records derived from tax returns, under the strict rules governing confidentiality and the rights of potential respondents

（The U.S bureau of labor statistics 2009）

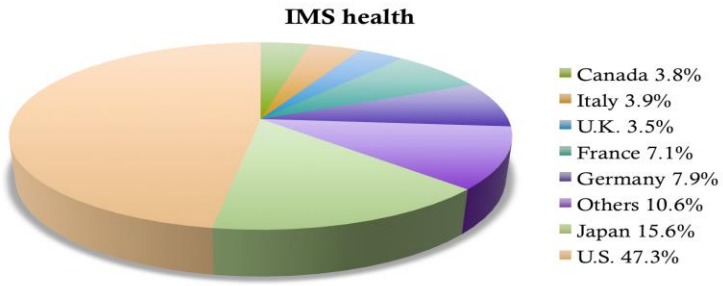
The U.S. Product Price Index Pharmaceutical Preparation Manufacturing is also increasing 53.7% for three years, which reveals there are huge demand of drugs.

Figure 2 Price per standard unit in selected countries, relative to the United States



In the Price per standard unit in selected countries, relative to the United States, Japan and Sweden are covered by OTC drugs.

Figure 3 Distribution of drug sales among major national markets 2008



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The distribution of drug sales among major national markets 2008 were covered 47.3% by the United States, which suggested to grow sales.

Table 7 Drug volume per capita in selected countries, 1981-1990 (real qualities relatives to the United States=100)

Country	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
France	222.2	208.2	206.7	218.5	211.1	256.8	301.6	331.8	356A	396.7
Germany	152.2	147.4	149.1	154.9	149.1	192.9	221.2	221.9	2331	277.4
Italy	124.0	143.0	135.0	139.3	142.1	171.8	213.5	213.5	239.3	286.3
United Kingdom	61.0	64.1	63.9	63.4	60.5	68.5	71.9	73.6	74.9	na
United States	100	100	100	100	100	100	100	100	100	100

Nom: See footnote 10.
SOURCE: See Danzon and Percy (1996).

Drug volume per capita in selected countries, 1981-1990 is France is growing 174.5 for 9 years.

Table 8 Markets for single-molecule cardiovascular products (Outpatient pharmacy), in selected countries, 1992

	United States	Canada	Germany	France	Italy	Japan	United Kingdom	Switzerland	Sweden
				Number of products					
Local products	710	157	619	263	365	449	176	160	109
Molecules	105	66	198	150	154	158	93	97	60
Products per molecule	6.76	2.38	3.13	1.75	2.37	2.84	1.89	1.65	1.98
				% of molecules available in both countries					
U. S. molecules, % match		50	61	51	54	56	59	43	41
Foreign molecules, % match		79	32	36	37	37	67	46	72
				% of sales on matching molecules					
U.S. sales, % match		94	96	93	97	95	96	91	76
Foreign sales, % match		97	61	47	58	57	89	74	92

SOURCE: Damon and Kim (1996); IMS data.

Comparing products per molecular between the United States and Japan are 3.92% differ. The Unites States is advance country of cardiovascular products.

VI. EFFECTS OF REGULATION ON INNOVATION

Drug regulation reduces the number of R&D, spending, and effects of management of firm's subsidiaries. Total R&D is categorized into two types, which are R&D investment in existing categories and R&D investment attempting new dosage forms and line extension.

A. Innovation Strategies of the Pharmaceutical Firm

The golden rule of innovation strategies are difficult to imitate with safety and efficacy profiles. The firm's R&D strategies are making balance in lower probability of regulatory approval. Entry of innovative biological markets have huge marketing opportunities since innovators passed the criteria of biological drug production and patents protect their financial contributions.

Table 9 Current R&D expenditures by type of research in Canada

Current R&D expenditures by type of research in Canada

	2007		2008	
	$ Million	%	$ Million	%
Basic				
Chemical	126.4	10.0	122.6	9.6
Biological	73.8	5.9	136.4	10.7
Applied				
Clinical Trail Phase I	30.7	2.4	12.4	1.0
Clinical Trail Phase II	125.0	9.9	121.6	9.6
Clinical Trail Phase III	361.8	28.7	353.8	27.9

Volumes in this column may not add to 100.0 due to rounding.
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R&D expenditures by Biological is increasing, which is address to shift R&D research from Chemical to Biological in Canada.

B. Revenue effects of regulation

Proportional price regulations, disproportionate price regulations, company specific revenue constrains, profit regulations apply to the U.K. pharmaceutical profit regulations (PPRS), and physical drug budgets.

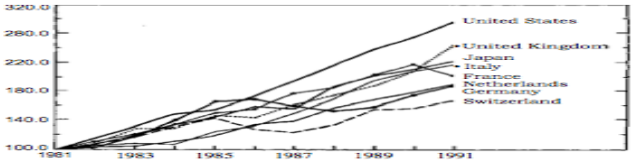
C. Effects of Regulation on the Cost of Capital, and Effects on Domestic and Foreign Firms

Price regulation affects innovation and raises the cost of capital. The retained earning; which is the amount excluding tax and dividends, provides a lower-cost source of capital for R&D. Domestic firms have a propensity to have a disproportionate share of their home markets. The strategy of entry to global markets is driven by centralized managements with acquisition of U.S. based firms and joint ventures.

D. Empirical Evidence

The number of R&D spending and innovations is increasing. Multinational firms tend to perform R&D in their home countries because they can easily access their core competences.

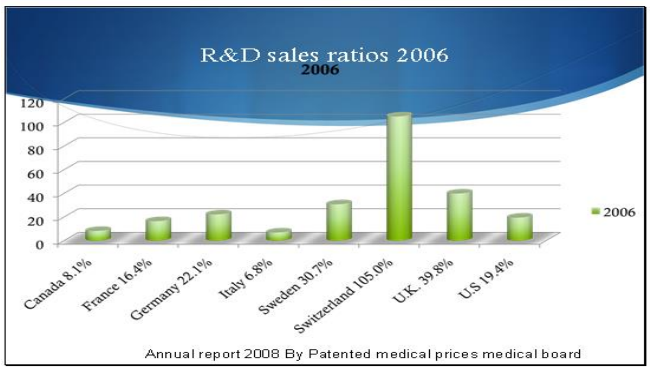
Figure 3 Growth in real R&D expenditures in selected countries, 1981-1991



NOTE: Adjusted using GDP deflator.
SOURCE: Author's calculations using data from Centre for Medicines Research [1993].

Growth in real R&D expenditures the United States are rapidly increasing such as more than double in growth rate for 9 years.

Figure 4 R&D salary ratio 2006



R&D sales ratio at Switzerland is outstanding in 2006.

VII. EFFECTS OF REGULATION ON PRODUCTIVITY

European economic community (EEC) stipulations regulate that EU countries price high costs on their domestic products. Even though the U.K. is a member of the EU, the U.K's rate-of-return regulation is talent for domestic firms. Alliance of E.U. manufactured facilities address robust resistant forces of the United States.

A. Incentive Effects of Biased Regulation

Regulation that offers higher prices in return for domestic productions causing the pharmaceutical firm to accept excessive input costs. The following formula calculates the maximum profit.

- R= P(L,K;M)Q(L,K;M)-WL—Wk

  Equation of marginal product against ,marginal costs for expanding profit maximizations.
- PdQ/dXi=wi-dp/dXiQ

B. Data and Empirical Methods

The total EU market establishes larger total sales volume than the U.S. Opportunities economic scales are similar. Thus, the subsidiaries' allocation are easily replaced due to corresponding scope regulations. Organization for Economic Co-operation and Development (OECD) data on input levels.

Table 10 Growth number of employments in selected countries, 1975-1990
(1980=100)

Country'	*1975*	*1980*	*1985*	*1990*
France				
Total manufacturing	106.2	100.0	88.1	83.5
Drugs and medicines'	101.9[b]	100.0	106.8	115.8
Germany				
Total manufacturing	100.0	100.0	92.9	98.3
Drugs and medicines	105.1[b]	100.0	104.5	113.4
Italy				
Total manufacturing	94.7	100.0	85.0	85.2
Drugs and medicines'	101.4[b]	100.0	97.0	104.2b
United Kingdom				
Total manufacturing	108.1	100.0	78.5	77.6
Drugs and medicines'	90.0	100.0	91.4	103.5
United States				
Total manufacturing	89.5	100.0	94.7	95.0
Drugs and medicines'	86.7	100.0	94.8	105.8

a. Survey based data; may not be national accounts compatible.
b. Figures are estimated using the ratio of drugs •and medicines to other chemicals for the closest year for which data are available.
SOURCE: OECD STAN database. See Danzon and Percy (1996).

Growth number of employments in the United States between 1975 and 1990, drugs and medicines are increasing 19.1%. Likewise the other countries are similar advance rates.

Table 11Value added per employee in selected countries, relative to the United States, 1970-1990(United States=100)

Country	1970	1975	1980	1985	1990
France					
Total manufacturing	70.5	71.7	79.4	79.9	92.7
Drugs and medicines'	—	23.2[b]	29.8	21.7	19.8
Germany					
Total manufacturing	63.9	66.3	73.3	74.3	77.2
Drugs and medicines	—	36.8[b]	42.7	36.2	33.2
Italy					
Total manufacturing	60.8	64.0	76.6	76.3	79.4
Drugs and medicinesb.c	—	39.9[b]	43.7	38.4	28.7b
United Kingdom					
Total manufacturing	47.1	48.6	51.6	57.5	62.6
Drugs and medicines'x	37.0	41.3	49.1	47.4	47.0

Nom: PPP currency conversion.
a. Survey-based employment data; may not be national accounts compatible.
b. Figures estimated using the ratio of drugs and medicines to other chemicals for the closest year for which data are available.
c. Survey-based value-added data; may not be national accounts compatible.
SOURCE: Author's calculations using OECD STAN data. See Danzon and Percy (1996).

In the value added per employee in the United Kingdom for 20 years, drug and medicines is growing 10%, which address value add is gaining.

Table 12 Growth Gross Fixed Capital Formation in selected countries, 1975-1990

Country	1975	1980	1985	1990
France				
Total manufacturing	83.3	100.0	94.4	132.6
Drugs and medicines'		100.0	156.7	250.1
Germany				
Total manufacturing	76.2	100.0	96.4	132.6
Drugs and medicines		100.0	119.5	136.2
United Kingdom				
Total manufacturing	95.9	100.0	100.8	108.3
Drugs and medicines'	76.2	100.0	131.5	161.9
United States				
Total manufacturing	75.3	100.0	93.4	101.7
Drugs and medicines'	76.8	100.0	123.9	160.4

NOTES: Gross fixed capital formation is national accounts compatible (land, buildings, machinery, and equipment). Real GDP-deflator-adjusted values.
a. Capital formation figures are survey-based data; may not be national accounts compatible.
SOURCE: Author's calculations using OECD STAN data. See Danzon and Percy (1996).

(1980-100)

Table 13 Growth in gross fixed capital format per employee in selected countries, 1975-1990 (1980=100)

Drugs and medicines of growth in gross fixed capital formation in the United States between 1975 and 1990 was growing 83.6% .

Country	1975	1980	1985	1990
France				
Total manufacturing	78.5	100.0	107.2	158.8
Drugs and medicines[a]		100.0	146.8	215.9
Germany				
Total manufacturing	76.1	100.0	103.8	134.9
Drugs and medicines		100.0	114.3	120.1
United Kingdom				
Total manufacturing	88.8	100.0	128.3	139.7
Drugs and medicines [b]	84.4	100.0	143.9	156.3
United States				
Total manufacturing	84.1	100.0	98.7	107.1
Drugs and medicines [b]	88.6	100.0	130.7	151.7

NOTES: Gross fixed capital formation is national accounts compatible (land, buildings, machinery, and equipment). Real GDP-deflator-adjusted values.
a. Capital formation figures are survey-based data; may not be national accounts compatible.
b. Employment figures are survey-based data; may not be national accounts compatible.
SOURCE: OECD STAN database. See Danzon and Percy (1996).

Table 14 Labor compensation per employee in selected countries, relative to the United State, 1970-1990 (United States=100)

Drugs and medicines of growth in gross fixed capital format per employee in the United States between 1975 and 1990 was growing 63.1% , which is decreasing 20.5% of drugs and medicines of growth in gross fixed capital formation.

Country	1970	1975	1980	1985	1990
France					
Total manufacturing	57.3	66.5	73.3	75.3	84.4
Drugs and medicines'	—	76.5	89.0	84.5	86.1
Germany					
Total manufacturing	53.7	60.8	68.4	70.4	77.1
Drugs and medicines	—	71.0	67.6	64.2	65.4
Italy					
Total manufacturing	47.4	59.5	58.9	60.1	65.5
Drugs and medicinesa					
United Kingdom					
Total manufacturing	49.6	57.6	55.6	60.1	67.9
Drugs and medicines'	41.1	56.7	61.3	68.8	78.0

NOTES: Labor compensation is national accounts compatible labor costs. PPP currency conversion.
a. Employment figures are survey-based data; may not be national accounts compatible.
SOURCE: OECD database. See Danzon and Percy (1996).

In labor compensation per employee in selected countries, relative to the United State between 1970 and 1990, total manufacturing is glowing 18.3%, drugs and medicines is increasing 36.9%, which were double size of total manufacturing the United Kingdom.

Table 15 Hypothetical Ex post return to physical capital, assuming no in tangible capital, 1976-1990 (percent)

Country	1976-80	1981-85	1986-90
France			
Total manufacturing	27	23	29
Drugs and medicines			
GDP deflator	10	7	7
PPI drugs	n.a.	19	36
Germany			
Total manufacturing	34	29	31
Drugs and medicines			
GDP deflator	52	59	71
PPI drugs	n.a.	59	74
Italy			
Total manufacturing	22	23	27
Drugs and medicines			
GDP deflator	n.a.	n.a.	n.a.
PPI drugs	n.a.	n.a.	n.a.
United Kingdom			
Total manufacturing	18	17	23
Drugs and medicines			
GDP deflator	66	63	73
PPI drugs	n.a.	68	97
United States			
Total manufacturing	27	24	29
Drugs and medicines			
GDP deflator	128	138	169
PPI drugs	n.a.	128	121

NOTE: Return to capital = [value added – labor compensation] /capital stock. Depreciation rate = 10%.
SOURCE: Danzon and Percy (1996).

Hypothetical Ex post return to physical capital, assuming no in tangible capital, 1976-1990 is that the total manufacturing in the United States is glowing 5%, GDP deflator is increasing 41% for 14 years.

VIII CROSS-NATIONAL MULTIPLIER EFFECTS OF REGULATION

Stricter regulation in one country can decrease the total global revenue of translational drug firms. Two policies implemented as strategies for stringent regulations which establish international drug prices, and are a milestone of drug price control the domestic drug prices, and allowing parallel importing. Two policies implemented as strategies for stringent regulations which establish international drug prices, and are a milestone of drug price control the domestic drug prices, and allowing parallel importing.

A. Welfare Implications of Parallel Trade as Policy Options

There are price and quality effects and price differences do not imply cost shifting. Policy options contain Parallel trade and International Price Comparison.

IX. CONCLUSION

Even though drug regulation is getting stricter, the regulation cannot control the total drug expenditures as seen in the empirical evidence. Making balance between controlling health care spending and maintaining motivations for novel R&D would improve health and quality of life. The regulation of each country reveals a synergistic interaction between costs, pricing, spending, R&D, productivities, and trading in global economies. The international competitors focus on their exchange rates instead of regulation concern and consumer's purchasing powers.

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