Behavioral corporate finance

Relaxes the rationality assumption.

Can be divided in two:

1. Assuming irrational entrepreneurs/managers, but rational investors.
2. Assuming irrational investors, but rational entrepreneurs.

Behavioral assumptions can be used to explain same outcomes as rational, optimizing agents with different objectives, (the agency literature).

We will look at
Landier and Thesmar (2005):

which is of type 1: Assuming irrational entrepreneurs/managers, but rational investors:

By selection entrepreneurs are typically too optimistic about their firm's future – does this have consequences for financial contracts?

Optimistic entrepreneurs will focus more on having control in good states.

A few words about the paper as such:
Not published, yet cited here and there. Arguably because their idea seems plausible and they have data for their hypotheses.
However, the paper has its' flaws and seems immature – as this branch of literature in general.

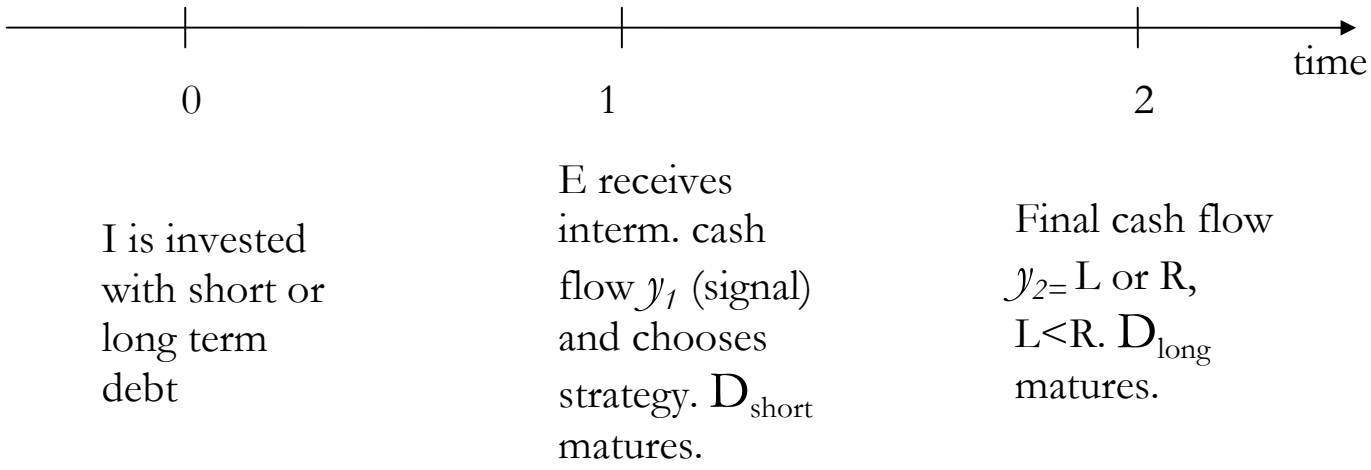
Model:

Two types of entrepreneurs, E: Optimists and realists.

Two types of project: good or bad.

Only debt is possible financing. (realistic for entrepreneurs? yes and no)

Timing:



The intermediate cash flow (signal), y_1 , which is *non-contractable*, is either $y_1=R$ or $y_1=0$.

If the project is good, $y_1=R$ with probability 1.

If the project is bad, $y_1=R$ with prob. p and $y_1=0$ with prob. $(1-p)$.
(Hence, if signal is *0*, the project is sure to be bad.)

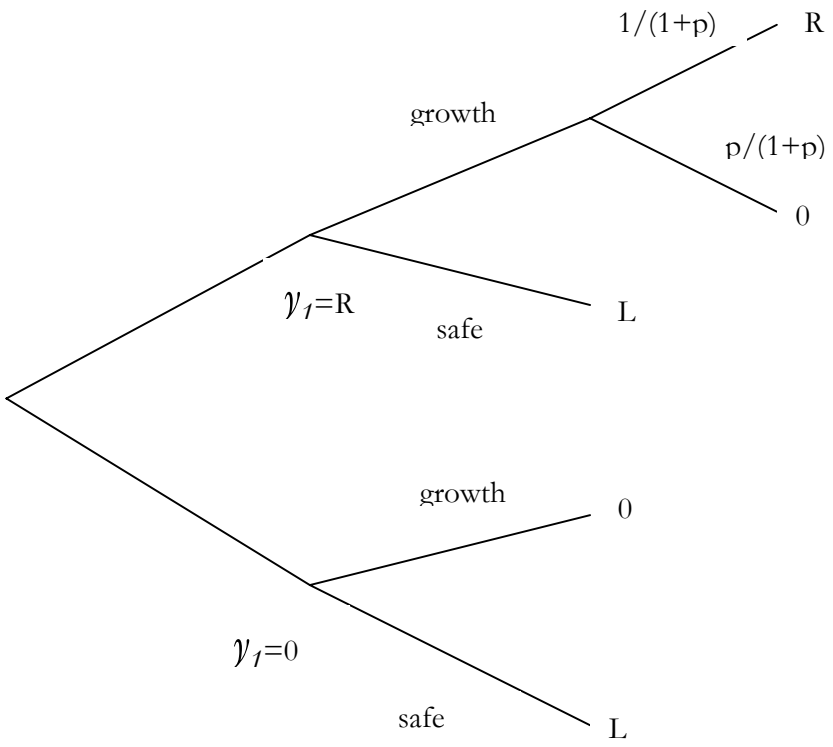
Strategies:
growth or *safe*

Socially optimal strategy choices:

If project is good, *growth* is the best strategy, (because $\frac{1}{1+p}R > L$)

If project is bad, *safe* is the best strategy.

If *safe* is chosen, both project types yield $y_2 = L$.
If *growth* is chosen on a good project, $y_2 = R$.
If *growth* is chosen on a bad project, $y_2 = 0$.


1/(1+ρ)
R
growth
ρ/(1+ρ)
0
y_1=R
L
safe
growth
0
y_1=0
safe
L

Ex ante there are equally many good and bad projects.
All entrepreneurs are risk averse.

Realists have correct priors (i.e. ½)
Optimists have wrong priors, they believe ex ante that their project is *certain* to be good.
(extreme case)

Investors earn/demand zero in expectation (i.e. perfect competition).
They have correct priors and know there are two types of entrepreneurs, but cannot distinguish them ex ante.

Consider the two debt contracts:

Short term: investor invests I at t=0 and demands D_{short} at t=1. If at t=1 entrepreneur doesn't have enough money to pay $D_{short,}$ investor gets control and chooses *safe* and gets L at t=2.

By assumption $L>I$. So, given that investors (because of competition) only demands to earn zero in expectation, it follows that $D_{short}<I$.

Long term: investor invests I at t=0 and demands D_{long} at t=2.

Given that investors (because of competition) only demands to earn zero in expectation, it follows that $D_{long}=I$ because investors are sure to get $D_{long}=I$ at t=2 if the correct strategy is chosen.

What debt contract will the two entrepreneur types choose? Will they self-select into a separating equilibrium?

Yes,

Optimists are sure they have a good project and are ex ante sure the intermediate cash flow at t=1 is more than enough to pay $D_{short.}$ Because $D_{short} < D_{long} = I$, optimists will choose the short term contract.

Realists won't choose D_{short} even though $D_{short} < D_{long} = I$, because they know they risk having zero payoff from the whole project if $y_1 = 0$ and investor takes control. With D_{long} realists avoid the possibility of getting 0 from the whole project (happens with D_{short} if $y_1 = 0$). This is better than the contract D_{short} because of risk aversion (even though $D_{short} < D_{long} = I$).

A closer look at participation and incentive constraints in Landier&Thesmar:

Investors demand zero in expected profits. The zero profit condition is:

$$I = \frac{1}{2} D_{short} + \frac{1}{2} p D_{short} + \frac{1}{2}(1-p)L$$

$$\Leftrightarrow$$

$$I = \frac{1+p}{2} D_{short} + \frac{1-p}{2} L$$

$$\Leftrightarrow$$

$$D_{short} = \frac{2I - L(1-p)}{1+p}$$

If $L=I$:

$\Rightarrow$

$$D_{short} = \frac{2I - I + pI}{1+p} = I$$

However, $L>I$ by assumption, hence $D_{short} < I$.

Realists prefer D_{long} because of risk aversion (consumption smoothing):

$$\frac{1}{2}[u(2R - D_{short}) + pu(R - D_{short}) + (1-p)u(0)] < \frac{1}{2}[u(2R - I) + pu(R - I) + (1-p)u(L - I)]$$

Optimists must prefer to take D_{short} rather than pretend being realists and take D_{long}:

$$u(2R - D_{short}) > u(2R - D_{long})$$

$$\Leftrightarrow$$

$$u(2R - \frac{2I - L(1-p)}{1+p}) > u(2R - I)$$

Risk is not an issue for an optimist, so write the difference between the expected value of the two:

$$\Delta = (2R - \frac{2I - L(1-p)}{1+p}) - (2R - I)$$

$$= \frac{1-p}{1+p}(L - I) > 0$$

Note: typo in paper (at least my version), < instead of >.

Data:

French data.

On entrepreneurs:

- Sociodemographic characteristics (age, education, social background).
- Entrepreneur's own growth expectations at start of business.

Tax reports.

Empirical analysis:

Find quantitative measure of: expectation error = expectations – realizations.

Substantial heterogeneity in expectation error in the data.

Regress expectation error on a series of entrepreneur and project characteristics.

They find that education is pos. correlated with high expectations…. and more.

Expectation error is pos. correlated with date zero use of short term debt.
as the model suggests.

IV estimation with IV for expectation error: Depression rate, Sunlight and Religious beliefs.
read on your own

Law and Finance

LaPorta et al. (1998)

Cited 3000 times – has almost created a new venue of research.

Law and the quality of its enforcement are potentially important determinants of what rights security holders have and how well these rights are protected.
…Corporate finance may critically turn on these legal rules and their enforcement.

Differences in legal protection might explain why we see different financing patterns in different countries – conf. bank vs. market story.

Empirical analysis of 49 countries:

How the quality of enforcement of law varies, and whether these variations matter for corporate finance patterns.

Starting point:

Laws differ markedly around the world.

Major families of law:

1. Common law (Originally English. US, and other countries.)
2. Civil law (from Roman law; widely distributed around the world)
    a. French civil law (and other countries)
    b. German civil law (and other countries)
    c. Scandinavian

Treat family of law as exogenous. (Sensible?)

Authors show that:

1. Investor protection:

Common law countries gives both shareholders and creditors the strongest protection.

French civil law countries the weakest.

German and Scandinavian countries in between.

Not dependent of country's income.

2. Quality of law enforcement

Highest in Scandinavian and German civil countries,

Common law countries is in between,

worst in French civil law countries.

Accounting standard is included in quality of law enforcement.

Quality of law enforcement improves with level of income.

Note: Quality of law enforcement could have been a substitute for investor protection. Seems that it is not.

Table 1 shows variables.

Table 2 shows some results.

note that legal origin matters, hence opt-out option is not possible or not efficient (or simply not used…)

Table 4 shows creditor rights

note that US is quite creditor *un*-friendly

German civil law is protective for secured creditors,
while provide low shareholder protection. (Conf. financial market dominated by debt.)

TABLE 1

VARIABLES

Variable	Description	Sources
Origin	Identifies the legal origin of the company law or commercial code of each country. Equals one if the origin is English common law, two if the origin is the French commercial code, three if the origin is the German commercial code, and four if the origin is Scandinavian civil law	Reynolds and Flores (1989)
One share–one vote	Equals one if the company law or commercial code of the country requires that ordinary shares carry one vote per share, and zero otherwise. Equivalently, this variable equals one when the law prohibits the existence of both multiple-voting and nonvoting ordinary shares and does not allow firms to set a maximum number of votes per shareholder irrespective of the number of shares owned, and zero otherwise	Company law or commercial code
Proxy by mail allowed	Equals one if the company law or commercial code allows shareholders to mail their proxy vote to the firm, and zero otherwise	Company law or commercial code
Shares not blocked before meeting	Equals one if the company law or commercial code does not allow firms to require that shareholders deposit their shares prior to a general shareholders meeting, thus preventing them from selling those shares for a number of days, and zero otherwise	Company law or commercial code
Cumulative voting or proportional representation	Equals one if the company law or commercial code allows shareholders to cast all their votes for one candidate standing for election to the board of directors (cumulative voting) or if the company law or commercial code allows a mechanism of proportional representation in the board by which minority interests may name a proportional number of directors to the board, and zero otherwise	Company law or commercial code
Oppressed minorities mechanism	Equals one if the company law or commercial code grants minority shareholders either a judicial venue to challenge the decisions of management or of the assembly or the right to step out of the company by requiring the company to purchase their shares when they object to certain fundamental changes, such as mergers, asset dispositions, and changes in the articles of incorporation. The variable equals zero otherwise. Minority shareholders are defined as those shareholders who own 10 percent of share capital or less	Company law or commercial code

Preemptive rights	Equals one when the company law or commercial code grants shareholders the first opportunity to buy new issues of stock, and this right can be waived only by a shareholders' vote; equals zero otherwise	Company law or commercial code
Percentage of share capital to call an extraordinary shareholders' meeting	The minimum percentage of ownership of share capital that entitles a shareholder to call for an extraordinary shareholders' meeting; it ranges from 1 to 33 percent	Company law or commercial code
Antidirector rights	An index aggregating the shareholder rights we labeled as "antidirector rights." The index is formed by adding 1 when (1) the country allows shareholders to mail their proxy vote to the firm, (2) shareholders are not required to deposit their shares prior to the general shareholders' meeting, (3) cumulative voting or proportional representation of minorities in the board of directors is allowed, (4) an oppressed minorities mechanism is in place, (5) the minimum percentage of share capital that entitles a shareholder to call for an extraordinary shareholders' meeting is less than or equal to 10 percent (the sample median), or (6) shareholders have preemptive rights that can be waived only by a shareholders' vote. The index ranges from zero to six	Company law or commercial code
Mandatory dividend	Equals the percentage of net income that the company law or commercial code requires firms to distribute as dividends among ordinary stockholders. It takes a value of zero for countries without such a restriction	Company law or commercial code
Restrictions for going into reorganization	Equals one if the reorganization procedure imposes restrictions, such as creditors' consent, to file for reorganization; equals zero if there are no such restrictions	Bankruptcy and reorganization laws
No automatic stay on secured assets	Equals one if the reorganization procedure does not impose an automatic stay on the assets of the firm on filing the reorganization petition. Automatic stay prevents secured creditors from gaining possession of their security. It equals zero if such a restriction does exist in the law	Bankruptcy and reorganization laws
Secured creditors first	Equals one if secured creditors are ranked first in the distribution of the proceeds that result from the disposition of the assets of a bankrupt firm. Equals zero if nonsecured creditors, such as the government and workers, are given absolute priority	Bankruptcy and reorganization laws
Management does not stay	Equals one when an official appointed by the court, or by the creditors, is responsible for the operation of the business during reorganization. Equivalently, this variable equals one if the debtor does not keep the administration of its property pending the resolution of the reorganization process. Equals zero otherwise	Bankruptcy and reorganization laws

TABLE 1 (*Continued*)

Variable	Description	Sources
Creditor rights	An index aggregating different creditor rights. The index is formed by adding 1 when (1) the country imposes restrictions, such as creditors' consent or minimum dividends to file for reorganization; (2) secured creditors are able to gain possession of their security once the reorganization petition has been approved (no automatic stay); (3) secured creditors are ranked first in the distribution of the proceeds that result from the disposition of the assets of a bankrupt firm; and (4) the debtor does not retain the administration of its property pending the resolution of the reorganization. The index ranges from zero to four	Bankruptcy and reorganization laws
Legal reserve	The minimum percentage of total share capital mandated by corporate law to avoid the dissolution of an existing firm. It takes a value of zero for countries without such a restriction	Company law or commercial code
Efficiency of judicial system	Assessment of the "efficiency and integrity of the legal environment as it affects business, particularly foreign firms" produced by the country risk rating agency Business International Corp. It "may be taken to represent investors' assessments of conditions in the country in question." Average between 1980 and 1983. Scale from zero to 10; with lower scores, lower efficiency levels	Business International Corp.
Rule of law	Assessment of the law and order tradition in the country produced by the country risk rating agency International Country Risk (ICR). Average of the months of April and October of the monthly index between 1982 and 1995. Scale from zero to 10, with lower scores for less tradition for law and order (we changed the scale from its original range going from zero to six)	International Country Risk guide
Corruption	ICR's assessment of the corruption in government. Lower scores indicate that "high government officials are likely to demand special payments" and "illegal payments are generally expected throughout lower levels of government" in the form of "bribes connected with import and export licenses, exchange controls, tax assessment, policy protection, or loans." Average of the months of April and October of the monthly index between 1982 and 1995. Scale from zero to 10, with lower scores for higher levels of corruption (we changed the scale from its original range going from zero to six)	International Country Risk guide

Risk of expropriation	ICR's assessment of the risk of "outright confiscation" or "forced nationalization." Average of the months of April and October of the monthly index between 1982 and 1995. Scale from zero to 10, with lower scores for higher risks	International Country Risk guide
Repudiation of contracts by government	ICR's assessment of the "risk of a modification in a contract taking the form of a repudiation, postponement, or scaling down" due to "budget cutbacks, indigenization pressure, a change in government, or a change in government economic and social priorities." Average of the months of April and October of the monthly index between 1982 and 1995. Scale from zero to 10, with lower scores for higher risks	International Country Risk guide
Accounting standards	Index created by examining and rating companies' 1990 annual reports on their inclusion or omission of 90 items. These items fall into seven categories (general information, income statements, balance sheets, funds flow statement, accounting standards, stock data, and special items). A minimum of three companies in each country were studied. The companies represent a cross section of various industry groups; industrial companies represented 70 percent, and financial companies represented the remaining 30 percent	International accounting and auditing trends, Center for International Financial Analysis and Research
Ownership, 10 largest private firms	The average percentage of common shares owned by the three largest shareholders in the 10 largest nonfinancial, privately owned domestic firms in a given country. A firm is considered privately owned if the state is not a known shareholder in it	Moodys International, CIFAR, EXTEL, WorldScope, 20-Fs, Price-Waterhouse, and various country sources
GNP and GNP per capita	Gross national product and gross national product per capita in constant dollars of 1994	World Bank and International Monetary Fund
Gini coefficient	Gini coefficient for income inequality in each country. When the 1990 coefficient is not available, we use the most recent available	Deininger and Squire (1996); World Bank (1993*a*, 1993*b*)

TABLE 2

SHAREHOLDER RIGHTS AROUND THE WORLD

Country	One Share–One Vote	Proxy by Mail Allowed	Shares Not Blocked before Meeting	Cumulative Voting/ Proportional Representation	Oppressed Minority	Preemptive Right to New Issues	Percentage of Share Capital to Call an Extraordinary Shareholder Meeting	Antidirector Rights	Mandatory Dividend
	A. Shareholder Rights (1 = Investor Protection Is in the Law)								
Australia	0	1	1	0	1	0	.05[a]	4	.00
Canada	0	1	1	1	1	0	.05	5	.00
Hong Kong	0	1	1	0	1	1	.10	5	.00
India	0	0	1	1	1	1	.10	5	.00
Ireland	0	0	1	0	1	1	.10	4	.00
Israel	0	0	1	0	1	0	.10	3	.00
Kenya	0	0	1	0	1	0	.10	3	.00
Malaysia	1	0	1	0	1	1	.10	4	.00
New Zealand	0	1	1	0	1	0	.05	4	.00
Nigeria	0	0	1	0	1	0	.10	3	.00
Pakistan	1	0	1	1	1	1	.10	5	.00
Singapore	1	0	1	0	1	1	.10	4	.00
South Africa	0	1	1	0	1	1	.05	5	.00
Sri Lanka	0	0	1	0	1	0	.10	3	.00
Thailand	0	0	1	1	0	0	.20[b]	2	.00
United Kingdom	0	1	1	0	1	1	.10	5	.00
United States	0	1	1	1	1	0	.10	5	.00
Zimbabwe	0	0	1	0	1	0	.05	3	.00
English-origin average	**.17**	**.39**	**1.00**	**.28**	**.94**	**.44**	**.09**	**4.00**	**.00**
Argentina	0	0	0	1	1	1	.05	4	.00
Belgium	0	0	0	0	0	0	.20	0	.00
Brazil	1	0	1	0	1	0	.05	3	.50
Chile	1	0	1	1	1	1	.10	5	.30
Colombia	0	0	1	1	0	1	.25	3	.50
Ecuador	0	0	1	0	0	1	.25	2	.50
Egypt	0	0	1	0	0	0	.10	2	.00
France	0	1	0	0	0	1	.10	3	.00
Greece	1	0	0	0	0	1	.05	2	.35

TABLE 4

CREDITOR RIGHTS AROUND THE WORLD

Country	No Automatic Stay on Assets	Secured Creditors First Paid	Restrictions for Going into Reorganization	Management Does Not Stay in Reorganization	Creditor Rights	Legal Reserve Required as a Percentage of Capital
	A. Creditor Rights (1 = Creditor Protection Is the Law)					
Australia	0	1	0	0	1	.00
Canada	0	1	0	0	1	.00
Hong Kong	1	1	1	1	4	.00
India	1	1	1	1	4	.00
Ireland	0	1	0	0	1	.00
Israel	1	1	1	1	4	.00
Kenya	1	1	1	1	4	.00
Malaysia	1	1	1	1	4	.00
New Zealand	1	0	1	1	3	.00
Nigeria	1	1	1	1	4	.00
Pakistan	1	1	1	1	4	.00
Singapore	1	1	1	1	4	.00
South Africa	0	1	1	1	3	.00
Sri Lanka	1	0	1	1	3	.00
Thailand	1	1	0	1	3	.10
United Kingdom	1	1	1	1	4	.00
United States	0	1	0	0	1	.00
Zimbabwe	1	1	1	1	4	.00
English-origin average	**.72**	**.89**	**.72**	**.78**	**3.11**	**.01**
Argentina	0	1	0	0	1	.20
Belgium	1	1	0	0	2	.10
Brazil	0	0	1	0	1	.20
Chile	0	1	1	0	2	.20
Colombia	0	0	0	0	0	.50
Ecuador	1	1	1	1	4	.50
Egypt	1	1	1	1	4	.50
France	0	0	0	0	0	.10
Greece	0	0	0	1	1	.33
Indonesia	1	1	1	1	4	.00

TABLE 5

RULE OF LAW

COUNTRY	ENFORCEMENT VARIABLES					ACCOUNTING: Rating on Accounting Standards	GNP PER CAPITA (U.S. $)
	Efficiency of Judicial System	Rule of Law	Corruption	Risk of Expropriation	Risk of Contract Repudiation		
	A. Country Scores						
Australia	10.00	10.00	8.52	9.27	8.71	75	17,500
Canada	9.25	10.00	10.00	9.67	8.96	74	19,970
Hong Kong	10.00	8.22	8.52	8.29	8.82	69	18,060
India	8.00	4.17	4.58	7.75	6.11	57	300
Ireland	8.75	7.80	8.52	9.67	8.96	na	13,000
Israel	10.00	4.82	8.33	8.25	7.54	64	13,920
Kenya	5.75	5.42	4.82	5.98	5.66	na	270
Malaysia	9.00	6.78	7.38	7.95	7.43	76	3,140
New Zealand	10.00	10.00	10.00	9.69	9.29	70	12,600
Nigeria	7.25	2.73	3.03	5.33	4.36	59	300
Pakistan	5.00	3.03	2.98	5.62	4.87	na	430
Singapore	10.00	8.57	8.22	9.30	8.86	78	19,850
South Africa	6.00	4.42	8.92	6.88	7.27	70	2,980
Sri Lanka	7.00	1.90	5.00	6.05	5.25	na	600
Thailand	3.25	6.25	5.18	7.42	7.57	64	2,110
United Kingdom	10.00	8.57	9.10	9.71	9.63	78	18,060
United States	10.00	10.00	8.63	9.98	9.00	71	24,740
Zimbabwe	7.50	3.68	5.42	5.61	5.04	na	520
English-origin average	**8.15**	**6.46**	**7.06**	**7.91**	**7.41**	**69.62**	**9,353**
Argentina	6.00	5.35	6.02	5.91	4.91	45	7,220
Belgium	9.50	10.00	8.82	9.63	9.48	61	21,650
Brazil	5.75	6.32	6.32	7.62	6.30	54	2,930
Chile	7.25	7.02	5.30	7.50	6.80	52	3,170
Colombia	7.25	2.08	5.00	6.95	7.02	50	1,400
Ecuador	6.25	6.67	5.18	6.57	5.18	na	1,200
Egypt	6.50	4.17	3.87	6.30	6.05	24	660
France	8.00	8.98	9.05	9.65	9.19	69	22,490
Greece	7.00	6.18	7.27	7.12	6.62	55	7,390

Next question:
How do people adapt to the different legal environment?
(obvious causal direction?....)

Developing substitute mechanism for poor protection or enforcement?

Yes, they do.

Two main types according to the paper:

Mandatory standards
e.g. mandatory dividend payments
(resembles debt…)

Ownership concentration
bigger owners are stronger owners, and
less coordination problems (e.g. free-riding)

Ownership concentration

is big, and common, around the world.

Consistent with finding that investors are in general not very well protected.

On average, around 50% of a publicly traded firm's equity is owned by the three largest owners.

Better accounting standards
and
better shareholder protection
is
correlated with lower concentration of ownership.

e.g. highest concentration found in French civil law countries

Last question:
Do countries with worse environment for investors have lower growth?

Subject to current research.

Seems that better financial system gives better growth.

Countries with poor investor protection have smaller financial markets.

Many exceptions, however.

See paper for references.

Some related empirical examples:
In Italy (French civil law country) companies rarely go public.
And voting premium (difference in share price between shares with different voting rights, but equal cash-flow rigths) is much larger than in US.

> what does this say about division of control and (expected value) of residual income?

Common law countries have highest ratio of external capital.

Common law countries have highest number of firms undergoing IPOs.

Further related questions

Also some theoretical research on which legal system (family) is better for what kind of growth. (ask me for references…)

Everything (e.g. legal system) is endogenous in the end? But path dependence?

A scandinavian model financial system??

Sarbanes-Oxley Act

- US stock market becoming stricter after corporate scandals.
  - investor protection
- After S-Ox seems that London got more and more of new listings (IPOs).
  - well-known forum shopping

Minority shareholder rights also a common issue in Norway

- Røkke and Aker
- Opticom
- SeaDrill

Lastly,

Tirole (1986)

is removed from syllabus, but

you should know the main message:

When introducing one more agent into Principal-agent-like models as we have studied in my part of this course, i.e. when there is *three* actors instead of two, collusion between two of them is a big issue that typically will change the optimal contract scheme.