

# The need for NOVARS (NOn-voting Value Added Sharing Renewable Shares)

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Democratic worker-controlled firms suffer from underinvestment and 'degeneration'. To avoid both problems, workers must be able to recoup the full value of any projects resulting from their 'sweat equity' and risk-taking. This may require selling equity to outsiders. External equity can also help optimise the ratio of workers to physical capital. Existing types of share undermine work-place democracy without adequately protecting investors.

NOVAR shares (non-voting) separate ownership from control to avoid these problems. Investors are protected by:

- splitting firm's value added in a pre-defined way between themselves and workers,
- information, voice, consultation, resolution-proposing and emergency voting rights.

## **Democratic Firms**

The purpose of this article is to describe the rationale behind a new form of share intended to promote the development of democratic worker-controlled firms.

Numerous academic studies (reviewed in refs. 1, 2) show that a firm's performance can be improved substantially by the combination of:

- profit-sharing
- meaningful employee involvement in decision-making
- a significant degree of employee ownership
- accountability to external investors.

I define a 'democratic firm' as one controlled by its workers, with directors being elected by one worker one vote (perhaps pro rata for part-timers). Why are such firms so rare?

There are many theories for this (reviewed in refs. 2, 3):

- intrinsic inefficiency
- self-extinction tendencies
- poor support structures
- institutional bias and cultural inertia
- risk aversion of unwealthy workers
- bad management
- underinvestment
- 'degeneration' to capitalist control.

The latter two explanations are recurrent themes in the academic literature.

## **Underinvestment**

There is a certain amount of theoretical and anecdotal evidence that one breed of democratic firm, the common ownership workers' co-operative, is particularly prone to this problem (refs. 3, 4). 'Common ownership' in this context means there are no equity shares; a worker leaving such a co-op ceases to earn any money from his or her past efforts within that firm, and cannot extract the principal or the future earnings of any 'sweat equity' (foregone wages ploughed back into the company). Conversely, a new worker can free ride on older workers' sweat equity. The value to a worker of a dollar invested is higher

- the longer the worker expects to stay in the firm (which may lead to 'horizon clashes'),
- but
- lower than in a firm with individual ownership shares (predisposing to underinvestment).

This can be illustrated mathematically as follows. Standard asset pricing theory (eg ref. 5) states that \$1 today is worth  $\$(1 + i)$  in a year's time, where  $i$  is the annual interest rate incorporating an appropriate risk premium.

Dividing by  $(1 + i)$ , this is equivalent to \$1 in a year's time being worth  $\$1/(1 + i)$  today. In other words, the future dollar

should be discounted for the risk that it may never be received, the discount rate  $i$  increasing with that risk.

Similarly \$1 in 2 years' time is worth  $\$1/(1 + i)^2$  today (discounting twice), and \$1 in 3 years' time is worth  $\$1/(1 + i)^3$  today (discounting 3 times), and so on. In general, \$1 to be received in  $n$  years' time is worth  $\$1/(1 + i)^n$  today, assuming  $i$  remains constant.

Extending this idea, the 'present discounted value' of an investment project expected to yield an annual income of  $d$  for  $n$  consecutive years, with an annual discount rate of  $i$ , is

$$\frac{d}{(1 + i)} + \frac{d}{(1 + i)^2} + \dots + \frac{d}{(1 + i)^n} = \frac{d[1 - 1/(1 + i)^n]}{i}$$

[Eq. 1], applying a standard series summation.

This tends to  $d/i$  as  $n$  tends to infinity (the limiting case of perpetual earnings from the investment). The expected discount rate  $i$  may vary from year to year, and this can be incorporated into more complicated versions of the above formulae. For illustrative purposes, I shall assume the discount rate stays constant.

As an example, suppose an investment project yielded \$1,000 per year per worker (after allowing for depreciation, ie after subtracting enough from the firm's earnings to replace worn-out equipment, etc), and the firm's risk-adjusted discount rate was 10 per cent. If the firm was a common ownership co-op, the project would be worth the following amounts to five different workers who expected to stay in the firm for the following periods (plugging the numbers into Eq. 1):

|              |          |
|--------------|----------|
| A (1 year)   | \$909    |
| B (5 years)  | \$3,791  |
| C (10 years) | \$6,145  |
| D (20 years) | \$8,514  |
| E (for ever) | \$10,000 |

This example clearly shows how a potentially serious horizon clash may result from common ownership: the project is only

worth \$909 to a worker expecting to stay for 1 year, but is worth more than four times as much to a worker expecting to stay for 5 years.

Suppose further that the investment project cost \$4,000 each in foregone wages. It would not be in A or B's interests, but would be in C, D and E's. If the average worker, like B, expected to stay only 5 years, then the project would not go ahead if workers voted in a self-interested way, although it would probably proceed in an equivalent capitalist firm. The common ownership firm underinvests compared to its capitalist counterpart.

Generally speaking, it would be both illegal and tax inefficient for an incorporated firm to not subtract depreciation allowances from its earnings. Nevertheless, if we assume that no depreciation allowances are in fact subtracted and that all the equipment used in the project will wear out after  $n$  years, the problems outlined above become less extreme but do not go away. There are still horizon clashes if  $n$  is greater than some of the workers' expected time remaining in the firm. The firm still underinvests relative to its capitalist counterpart if  $n$  is greater than the average worker's expected time remaining (5 years in the example).

Returning to the original example, if the earnings from the project were paid as dividends on non-voting shares representing the sweat equity, and if those shares were easily marketable and could be held indefinitely after leaving the co-op, then the project would be worth \$10,000 to all workers, irrespective of how long they expected to remain in the co-op. The horizon clash between short- and long-term workers would not occur. Also, the project would probably be funded - underinvestment would be avoided.

However, if

(a) there were any restrictions on share transfers (such as a requirement for at least 51 per cent to be held by the workers), or

(b) the secondary (second-hand) market for the shares was inadequate, so that they could not be sold for their full present discounted value,

then underinvestment might still occur.

Restricted transfers could be particularly troublesome if most workers were too poor to buy out those wishing to sell their shares.

Secondary markets can be ineffective when trading is infrequent ("thin"), when there are insufficient buyers or sellers or when the present discounted value of single shares is too high (as often occurs with marketable membership shares such as those used in US plywood co-ops: ref. 6).

A further problem for democratic firms is that they often seem too risky to attract external (non-worker) investment. External investment is vital to achieve an optimal mix between capital and labour where workers are poor, to allow democratic firms to operate in capital-intensive sectors of the economy, and to allow workers to diversify their assets outside their firm, reducing their risk exposure.

Existing financial instruments are inadequate:

- a) Equity collateral is generally required to secure debt financing (see below); a firm suffering from inadequate reinvestment (internally-generated capital) may find it hard to borrow.
- b) Fixed dividend preference shares are probably even less attractive to investors than debt financing (what is the security?). Nor do they share in the firm's income risk, making them less attractive to the workers.
- c) Equity in the form of ordinary voting shares would undermine work-place democracy.
- d) Non-voting profit-sharing preference shares are not attractive to would-be investors: what is to stop the workers exploiting them by raising pay to reduce profits?

## **Degeneration**

I define 'degeneration' as the cessation of democratic (one worker one vote, pro rata for part-timers) control of a firm by its workers. Degeneration is a problem that has plagued the workers co-op movement (eg ref. 2). Why?

A firm's market value is not in general equal to either its book value or its net asset value at market prices (see discussion in ref. 2). The 'q-ratio' (ref. 7) between the market value of a firm's financial capital (debt + equity) and the replacement cost of its physical capital (assets) is generally between 0.4 and 9; the average q-ratio in the UK is around 1.3.

Why is the whole firm not worth the same as the sum of its parts? Because of intangible assets, for example: internal organisation, human capital, 'goodwill', brands, patents, copyrights, growth potential, monopoly power, etc.

A firm's market value is the markets' view of the present discounted value of its likely future distributions (dividends, sale or liquidation proceeds). This includes 'entrepreneurial income' resulting from past decisions and risk-taking (eg ref. 8).

If a democratic firm is 'too' successful, and the older members are unable to extract the full market value of their past efforts, investments, risk- and decision-taking, for any of the reasons outlined above, then pressure may grow:

- to hire non-voting labour - 'founderitis' (Julia Pellow, personal communication), or
- to sell out to capitalist control.

For examples, see discussions and citations in refs. 2 (pp551-555) and 9.

Both types of degeneration can be prohibited by the firm's rules, but this may have the unintended side-effect of reducing innovation and imaginative risk-taking, because workers must bear the risks of failure, but cannot gain the full fruits of success. Banning degeneration may place the firm at a long-term entrepreneurial disadvantage to capitalist companies.

Many publicly-traded US employee-owned or controlled firms face the problem of how to buy back leaving or retiring workers' shares in order to keep control of the firm by current rather than ex-workers. US private employee-owned companies whose stock is not publicly traded must be prepared to buy back shares of departing workers - some have huge potential share repurchase liabilities they cannot honour without selling out to outsiders. In many cases the value of the company's shares is reduced by the future buy-back liability, which may reduce the incentive to reinvest, since the workers cannot gain the full upside benefits of success. In both scenarios, many "nearly

democratic" firms may well become victims of their own success and lose their democratic character. One example is Marland Mold in Pittsfield, Massachusetts, which has an aging workforce (Mark Miller, Berkshire Worker Ownership Center, personal communication).

Even the Mondragon co-ops in the Basque Country are showing signs of degeneration (ref. 10). The co-ops have been reorganised into the 'Mondragon Co-operative Corporation' (MCC, ref. 11), decision making has been centralised, and a large number of non-member employees have been taken on (up to 30 per cent of workforce, ref. 10). Supposedly these changes have been made to help the group survive increased competition from multinationals (the co-ops originally developed in protected markets), and increased market volatility. It is not clear why more non-voting workers are required in order to be able to absorb economic shocks. In the past flexible working hours and redeployment of members within the group have allowed the group to weather several recessions.

The cause of the Mondragon group's incipient degeneration may actually lie in its capital structure. In a Mondragon co-op, reinvested surpluses are credited partly to a common reserve, and partly to individual capital accounts, on which interest is paid. A worker-member may only withdraw money from his or her account upon leaving the co-op. The accounts are revalued only in line with a measure of inflation, not in line with the future expected earnings of the co-op (ie present discounted value). In other words, the accounts represent a form of debt, not equity (see below), although there is a degree of risk-sharing, as interest payments vary to some extent with the performance of the co-op.

What may have happened is that the very success of the Mondragon group is becoming its undoing. The risk-taking and hard work of the older members has built up an organisation that is probably worth far in excess of the total book value of its members' accounts (it would be interesting to check this). One way older members can improve their rewards under the existing capital structure is by taking on more hired labour to raise profits, and then to increase interest and capital payments on the accounts.

The internal accounts also represent a huge buy-back liability. As older members with big accounts retire and seek to withdraw

their money, the co-ops must find the funds from somewhere without 'eating their capital'. Hence their recent attempts (on hold) to float some \$96 million of stock. In addition, new members entering a Mondragon co-op must invest around \$10,000. According to the MCC's press secretary (Jesus Ginto, personal communication), this does not represent a disincentive to join, since most of this sum can be borrowed interest-free from the Caja Laboral Popular, the bank at the heart of the group - indeed there is a waiting list of aspiring members (but why then the increase in hired labour?).

All democratic firms, including the Mondragon co-ops, could benefit from new financial instruments designed to overcome the dual dangers of underinvestment and degeneration.

## **Debt vs Equity**

Debt and equity are extremes along a spectrum of finance.

Debt has one advantage for democratic firms: it is non-voting (although usually not without influence). It has numerous disadvantages: its value is fixed (doesn't vary with the firm's success), the principal must be repaid and interest payments do not depend on the firm's performance; aside from the risk of default, debt does not share in the risks of the business.

Equity in the form of ordinary shares has numerous advantages: its dividends and market value are variable, going up and down with the success of the firm, and it never has to be repaid (it is 'locked in'). There is one big disadvantage for democratic firms - ordinary shares usually carry voting rights, which undermine work-place democracy. Various ways around this have been suggested, for example, maintaining at least 51 per cent of the voting rights in the hands of the workers collectively, and implementing one worker-one vote control over this block of shares. This scheme has two draw-backs:

- a) What protects the non-worker shareholders against concerted action by the workers, for example, to raise pay at the expense of profits and dividends?
- b) The workers' shares may suffer from restricted marketability if the company does 'too well', as explained above: the workers may be too poor to afford the 'true' price.

Employee trusts have been suggested as a cunning way around the latter problem: the idea is that a trust borrows money from a bank to fund the repurchase of shares at their 'true' value from employees. The company itself or its assets can act as the bank's collateral. The trouble with this arrangement is that banks are inherently conservative. A bank's valuation of a company (and hence the amount it is willing to lend) may be much lower than the company's true value (given the uncertainties involved in valuation, which boil down to an inability to forecast the future). The trust would not therefore be able to offer the workers as good a price for their shares as a venture capitalist might, and the workers might vote to sell the company. In other words, debt cannot compete with equity in the case of a risky investment.

To avoid underinvestment and degeneration, democratic firms need fully tradable investment which like debt is non-voting, but like equity is locked in and shares both income and capital value risk.

In a capitalist or investor-controlled firm, most ordinary shareholders don't vote, but their interests are protected by:

- an activist minority with similar goals
- the possibility of voting
- the ability to sell shares, reducing the price and leaving management vulnerable to a take-over
- shareholder agreements.

How can equity investors be protected in a worker-run firm? Pay ceilings and dividend floors may stop workers from reducing investors' returns on capital, but cannot cover all long-term contingencies.

The dilemmas I have outlined can be side-stepped by a new way of separating ownership from control. Equity investors can be protected effectively by means other than normal voting rights, as I shall describe in the next sections.

### **Value added sharing**

Value Added is sales minus all non-labour costs and is also equal to pre-tax profits + wages + perks.

Splitting a firm's value added in a pre-defined way between workers and shareholders can prevent the workers exploiting the investors. A simple scheme for doing this is as follows:

There are many versions of value added; to avoid confusion, I shall define 'value added residual' as

- sales
- + other income
- cost of bought-in materials and services
- rents and rates
- depreciation
- interest (fixed or externally determined) [Eq. 2].

Suppose each worker in a firm has a minimum wage (capital doesn't starve, but people do). Define the firm's 'surplus' as its

value added residual minus total minimum wages bill [Eq. 3].

Let a fraction (the 'bonus fraction') of the surplus be allocated to pay bonuses for workers, and the rest (the 'profit fraction') be pre-tax profit (so that bonus fraction + profit fraction = 1). If a firm had a surplus of \$1 million, and a bonus fraction of 0.7, the total pay bonus would be  $0.7 \times \$1 \text{ million} = \$700,000$ . The pre-tax profit would be  $0.3 \times \$1 \text{ million} = \$300,000$ .

## Renewal

Circumstances change with time: the number of workers or the amount of capital in the firm, its value added, wage rates in other companies, interest rates, technology, etc. The bonus and profit fractions could be complex formulae attempting to account for all conceivable circumstances, but this is unlikely to be flexible enough. A simpler alternative is to 'renew' each share yearly, as follows:

- renegotiate bonus and profit fractions
- if no agreement, reset both by comparing the firm's rate of return on capital to benchmarks pre-agreed at the time of the original share issue.

In this way, if the firm does well, the workers can force the bonus fraction up (and so capture a larger share of future

surpluses). If, however, the firm does badly, the investors can force the profit fraction up instead, to protect their anticipated future returns (by recouping a larger part of the smaller pool). Workers thus have a double incentive to maximise value added - firstly to maximise their bonuses in the current year, and secondly to maximise their share of future surpluses.

## **NOVARS.**

NOVARS combine these ideas into one financial instrument separating ownership and control in a novel way.

NOon-voting:           except limited consultation rights and  
                                  emergency voting rights if firm  
                                  'underperforms seriously'

Value

Added sharing:       surplus = value added residual - minimum  
                                  wages pre-tax profit = profit fraction x  
                                  surplus [Eq. 4]  
                                  total dividend = 'dividend fraction' x pre-tax  
                                  profit (if sufficient funds in profit/loss  
                                  account) [Eq. 5]

Renewable:           specified renewal period [1 year] after which  
                                  renegotiate or forcibly reset profit fraction to  
                                  push returns on capital towards target (see  
                                  below)

Shares:               last claim on residual assets tradable - price  
                                  can rise or fall  
                                  voice (speaking at meetings) and information  
                                  rights holder may propose resolutions or be  
                                  elected director

Emergency voting rights mean that each NOVAR share acquires one vote if the firm underperforms in any of the following ways for a pre-specified period (eg three consecutive years):

- makes a loss

- negative balance in profit and loss account (cumulative losses)
- net asset value less than 10 per cent of issued share capital.

Emergency votes are not permanent: they cease after a specified period (eg two consecutive years) during which the firm has not underperformed in any of these ways.

Shareholders and workers have to agree depreciation allowances, perks, expenses, advances on bonuses, appointments of independent experts, the share price for newly-issued NOVARS and changes in the dividend fraction, rules or minimum wages.

The voice and information rights, and the right to propose resolutions or to stand for election as a director would allow investors with business experience to persuade workers to make strategic changes and to strengthen the firm's management, if required. Management could also be buffered from day-to-day whims of the workers by a system of revolving elections (for example one third of directors could be re-elected every year, terms to run for three years unless a large majority of workers vote for removal of a particular director). These features, together with emergency voting rights, would provide an internal system of checks and balances in the running of the firm.

Pay bonuses are shared as follows: each worker has a pay rating, which is multiplied by his or her hours to give a 'relative contribution', which is then divided by the total of all the workers' relative contributions to give a 'fractional contribution'. This is multiplied by the total pay bonus to give that individual's annual pay bonus. Some of a worker's predicted annual bonus may be advanced to him or her every month to supplement the minimum wage.

A previous (less workable) version of NOVARS is described in ref. 2, together with related ideas.

### **Forced profit and bonus fraction resets**

Each NOVARS firm has a fixed target rate of return on equity, which is higher for riskier enterprises and lower for 'green' or 'social' businesses (more complex versions of this are possible, eg a target which varies with the business cycle by being linked

to returns on capital of a benchmark set of non-worker-controlled firms).

Whenever negotiations on a new profit fraction fail, the profit fraction is multiplied by a 'reset factor' equal to target/actual rate of return, but constrained to between 0.9 and 1.25 (say), to keep changes gradual while allowing the profit fraction to rise faster than it can fall. This asymmetry compensates equity investors for the fact that they are bearing more income risk than the workers (because of the minimum wage). The new bonus fraction is 1 minus new profit fraction.

Firms plough back profits; equity consists of both reserves and issued share capital. Losses or debts can result in negative reserves, so traditional measures of return on equity such as Return On Shareholders' Funds (ROSF) can be misleading when those shareholders' funds are small or negative.

A useful new measure of return on equity is 'ROOIE%' or 'percent Return On Opening Invested Equity', defined as

$$\text{ROOIE\%} = 100 \times \text{pre-tax profit} / \text{Opening Invested Equity}$$
[Eq. 6].

The latter is defined as

$$\text{Opening Invested Equity} = \text{reserves (if positive)} + \text{issued share capital}$$
 [Eq. 7]

at start of accounting period.

ROOIE% gets round the problems caused to ROSF when reserves are negative. The average ROOIE% for 1,300 listed UK industrial firms between 1992 and 1996 was about 16 per cent (using figures from Datastream UK).

## Secondary markets

Without a credible 'exit' route, most investors will not 'enter' into an investment. However, democratic firms need investment

which is locked in. To reconcile these two conflicting requirements, and to prevent underinvestment and degeneration, we must create an effective secondary market where existing bonds and shares in democratic firms can be traded. A primary or new issue market is also vital, to allow such firms to raise new capital as cheaply as possible from multiple investors. How can this be achieved for small NOVARS-based firms?

Three options, reaching progressively wider audiences (but not the general public) are:

- the company itself circulating buy and sell offers to its shareholders and creditors
- a trust to buffer supply and demand and act as an informal market maker
- a 'work-place democracy investment club' to arrange deals and circulate investment advertisements among members, making use of the Internet and exemptions from financial services regulations to keep down costs.

## **10. Summary.**

- Democratic firms are rare in part because of underinvestment, degeneration and poor management.
- To avoid these problems, they need freely tradable non-voting equity shares and effective second-hand markets in such shares.
- Ownership and control must be separated. Instead of routine voting rights, equity investors can be protected by value added sharing, share renewal (moving the rate of return on capital towards some target), information, voice and consultation rights, the right to propose resolutions and to stand for election as a director, and emergency voting rights.
- NOVARS combine these features, and a work-place democracy investment club based on the Internet could provide a cheap secondary market.

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The author would like to thank Nicholas Thompsell, Alan Thomas, Chris Doucouliagos, Martin Hockly, David Guinness, Robert Kincaid, numerous other colleagues and The Co-operative Bank for their invaluable contributions to the development of the NOVARS idea, which also draws heavily on the ideas of David Ellerman and Roger McCain (cited in Ref. 2).

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