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# Dynamic Labor Markets
## Organizing Labor Markets to Boost Job Opportunities and Social Welfare

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**Abstract:** Economic growth largely comes about through a process of extensive churning and restructuring, most of which is a shift from less to more successful firms *within* narrowly defined industries. In order to increase aggregate employment by, say, two per cent in a year, it may be necessary to create 7 to 10 times as many jobs, and worker flows need to be substantially larger still. Capitalism can be seen as a process of creative destruction where novel ideas continuously challenge old structures, thereby giving rise to structural transformation when new successful innovations, products, firms and industries arise while obsolete ones decline and exit. Empirical studies point out high-growth firms to be the main drivers of this process.

Research shows that high-growth firms can grow more in line with their inherent potential if labor markets are less regulated. Labor market institutions favoring reallocation and dynamism include portability of tenure rights, fully actuarial and portable pension plans, a full decoupling of health insurance from the current employer, decentralized and individualized wage-setting arrangements and government income insurance systems that encourage activation, mobility and risk-taking.

**Keywords:** Entrepreneurship; Gazelles; High-growth firms; High-impact entrepreneurship; Innovation; Institutions; Labor market policy.

**JEL Codes:** H32; J63; L5; L25; M13; O31; O43.

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## 1. Introduction

Aggregate data on economic growth gives the impression that changes are fairly small after all. In developed countries aggregate growth seldom exceeds three per cent and negative growth of equal magnitude is seen as dramatic. However, the aggregate figures effectively conceal a far more tumultuous reality when observed from a closer distance.

Growth is not primarily about existing firms growing by a similar percentage and about labor productivity increasing in existing jobs for current workers as a result of technical change and more capital per worker. Instead, growth largely comes about through a process of extensive churning and restructuring. Most of the restructuring is not even about a shift away from declining to growing industries; it is about shifts from less to more successful firms *within* narrowly defined industries.

Growth requires contraction and exit of some firms to free up resources that can be reallocated to expanding firms. Entry and expansion are flip sides to exit and contraction. Thus, growth in modern economies presupposes structural transformation including new firms, producing new goods in novel ways, and old firms either continually reinventing themselves through innovation and reorganization or being phased out.

The purpose of this policy paper is to analyze how key labor market institutions affect the restructuring process and how policy can facilitate restructuring in this area.

## 2. Restructuring and Gross Flows

Entrepreneurs establish new firms to commercialize new combinations. If successful they expand, if unsuccessful they exit. Similarly existing firms are continuously challenged by – and challenging – new and existing competitors. If successful, they expand, if not they contract and eventually exit. This dynamic process of creative destruction—channeled via firm entry, expansion, contraction and exit—brings about structural transformation. The economy changes form in the perennial struggle between new and old structures. A successful economy exhibits disproportionate growth of high-productivity firms relative to other firms.

The churning of firms and jobs is a ubiquitous feature of modern economies. The extent of this dynamism is illustrated in *Table 1* with data for the US economy averaged over almost three decades. The number of new jobs per year is as high as 18 per cent of the total number of jobs. One third of these new jobs are created in new establishments and two thirds through the expansion of existing establishments. At the same time, 16 per cent of all jobs are lost through the closure and contraction of some establishment, resulting in an annual net job growth rate of 2 per cent.

Thus, a gross job reallocation rate of 34 (18 + 16) per cent is necessary in order to achieve a net gain of a mere two per cent. The excess job reallocation rate – the amount of job churning over and above the minimum required to accommodate the net employment change – equals 32 per cent.

*Table 1* Job Creation and Destruction, US Annual Averages 1977–2005.

| | | | |
|---|---|---|---|
| Job creation by entry | 6% | Job destruction by exit | 6% |
| Job creation by expansion | 12% | Job destruction by contraction | 10% |
| Gross job creation | 18% | Gross job destruction | 16% |
| Job reallocation rate (gross job creation + gross job destruction) =18 + 16 | | | 34% |
| Net job growth (gross job creation – gross job destruction) = 18 – 16 | | | 2% |
| Excess job reallocation rate (job reallocation rate – net job growth) = 34 – 2 | | | 32% |

*Source*: Davis et al. (2008).

Extensive churning is a pervasive trait of all OECD economies. *Table 2* documents an average within-industry job reallocation rate of 22 per cent in the OECD. It is also striking that 80 per cent or more of the reallocation of workers takes place within narrowly defined sectors of the economy in developed countries (Caballero 2007). There are two basic drivers of this reallocation: (i) adjustment among firms with different technologies, and (ii) experimentation with improved products, management etc. Moreover, excess job reallocation rates are higher for newer plants because of greater uncertainty, more experimentation and higher variance in quality of the goods produced.

But while sizeable on average, there are also large differences across countries in the extent of churning. Churning is roughly two thirds higher in the high end relative to the low end. Moreover, worker flows are considerably higher, and here the difference between the high- and low-end countries is even greater. Pries and Rogerson (2005) estimate that worker flows are 1.5 to 2.5 times greater in the US than in Europe. They also show that the threshold for trying a new job, where the quality of the match cannot be know *ex ante* is increased by regulation (severance pay, order of dismissal, minimum wage stipulations etc.), and the likelihood of finding a true match is considerably reduced.

But how much churning is needed to achieve the potential productivity growth? Does the additional churning in the high-end countries have a beneficial growth effect, or is the rate in the low-end countries, which still appears quite high, sufficient?

*Table 2* Within-industry Job (1997–2004) and Worker (2000–2005) Reallocation Rates, 22 OECD Countries.

| | Job reallocation | Worker reallocation |
|---|---|---|
| High-end countries | 25% | 45% |
| Low-end countries | 15% | 25% |
| Average reallocation rate | 22% | 33% |
| Average excess reallocation rate | 18% | 30% |

*Note*: Worker reallocation = Hirings + Separations.
*Source*: Martin and Scarpetta (2012).

## 3. The Key Importance of High-Growth Firms (HGFs)

Capitalism can be seen as a process of creative destruction where novel ideas continuously challenge old structures, thereby giving rise to structural transformation when new successful innovations, products, firms and industries arise while obsolete ones decline and vanish (Schumpeter 1942). Empirical studies point out HGFs to be the main drivers of this process. Stangler (2010) estimates that one per cent of firms in the US create 40 per cent of all new jobs in a given year and that five per cent of all firms create almost 70 per cent of all new jobs. Henrekson and Johansson (2010) survey the numerous studies of firm growth. Despite the heterogeneity across existing studies in several dimensions, they conclude that some general findings emerge:

i) All studies report HGFs to be crucial for net job growth compared to non-HGFs. They generate a large share of all, or more than all (in the case where employment shrinks in non-HGFs), new net jobs. This is particularly pronounced in recessions when HGFs continue to grow, while non-HGFs decline or exit.

ii) Small firms are overrepresented among HGFs, but HGFs are of all sizes. In particular, larger firms are important job contributors in absolute terms. A small subgroup of large HGFs are major job creators.

iii) Age is of great importance. HGFs are younger on average and they are overrepresented in young and growing industries with a large inflow of new firms.

iv) Young and small HGFs grow organically to a larger extent than large and old HGFs, and therefore make a larger contribution to net employment growth.

v) HGFs are present in all industries. If anything, they are slightly overrepresented in service industries.

Davis et al. (2009) document that conditional on survival, young establishments have higher productivity and grow more rapidly than more mature establishments. They note that an "up or out" dynamic seems to be the rule, i.e., either you have higher productivity *and* grow more rapidly relative to incumbents or you exit.

Thus, we may conclude that HGFs are instrumental to economic growth and net job creation, in particular those HGFs that start growing rapidly when young and small. Caballero (2007) deems that 50 per cent of aggregate productivity growth results from reallocation of resources from low- to high-productivity plants within an industry and that roughly half of that in turn emanates from entry and exit.

Institutions shape the incentives of economic actors and the functioning of markets. Modern societies are rich webs of formal and informal institutions that differ greatly. A complete analysis of the effects of institutions on HGFs and structural transformation is an immense task, and here we analyze the effect of the organization of labor markets only.

Economic growth is an endogenous process driven by actors within the economic system. In order to achieve large-scale industrial growth a set of actors with different but complementary competencies is required to generate, identify, select and exploit new combinations (Henrekson and Johansson 2009): inventors, entrepreneurs, industrialists/managers, financiers (banks,

business angels, venture capitalists, portfolio investors, buyout firms), skilled labor and competent customers.

The economic activities of the various actors give rise to a dynamic process of creative destruction—channeled via firm entry, expansion, contraction and exit—which brings about structural transformation in the perennial struggle between new and old structures.

## 4. Productivity Effects of Labor Market Regulations

Most OECD countries have reformed their systems of employment protection in recent decades. However, there are still large differences in the strictness of employment protection across OECD countries with the US, Canada and the UK at the bottom and the Mediterranean countries, Mexico and Turkey at the top (Martin and Scarpetta 2012; Skedinger 2010). Moreover, most of the regulatory easing has taken place in the area of temporary contracts.

In general, it is true that the more easily inputs can be moved to high-productivity firms, the more responsive producer size is to productivity differences across firms. In other words, we would expect HGFs to be able to grow more in line with their inherent potential if labor markets are less regulated. There is also quite a bit of evidence in support of this conjecture.

Using firm-level harmonized data for  a cross-section of 16 countries Haltiwanger et al. (2008) find that hiring and firing costs tend to curb job flows, particularly in industries and firm size classes that require more frequent labor adjustments. In addition, they find that stringent regulations have a greater impact on job flows emanating from the entry and exit of firms than from reallocation among incumbents.

Bassanini et al. (2009) examine the effect of dismissal regulation on productivity in the OECD, using annual cross-country aggregate data on the stringency of employment protection legislation and industry-level data on productivity from 1982 to 2003. Their results suggest that mandatory dismissal regulations have a depressing impact on productivity growth in industries where layoff restrictions are more likely to be binding.

Based on harmonized firm-level data for the US and seven European countries, Bartelsman et al. (2013) find that producer level distortions reduce the correlations of output and productivity within an industry. The correlation between firm size and productivity is much stronger in the US than in European countries with more stringent labor market regulations.

Bartelsman et al. (2011) find that high-risk innovative sectors are relatively small in countries with strict employment protection legislation. The authors argue that this helps explain the slowdown in productivity in the EU relative to the US since the mid-1990s. Relatedly, Bloom et al. (2012) find that US firms are better at introducing productivity-enhancing IT than their European competitors. They largely attribute this to the more efficient management practices that can evolve in the more deregulated US labor market.

Autor et al. (2007) exploit differences in the timing and adoption of stricter job security mandates across US states to assess the effect on performance. They find a negative effect on firm entry rates, job flows and TFP growth.

Petrin and Sivadasan (2013) study the effect of labor market inflexibility by focusing on a legislative change in Chile that raised firing costs. In a flexible labor market the marginal product of labor and the average wage in an industry should tend towards equality across firms. Petrin and Sivadasan measure this gap before and after the reform and find that the gap increased after the legislated increase in firing costs, which suggests that the legislation reduced allocative efficiency.

Hsieh and Klenow (2009) estimate that aggregate TFP in India and China could increase by as much as 30–60 percent were they capable of attaining the US level of allocative efficiency across firms within industries. This result implies that plants with relatively low TFP are too large and vice versa, relative to a benchmark of allocative efficiency at the US level.

Haltiwanger et al. (2010) find that the quantitative effect of strict EPL is quite strong. They estimate that countries with the strictest employment protection would increase their reallocation rate by 50 per cent in the most dynamic sectors, i.e., the sectors that benefit the most from flexibility. Moreover, they find that the effect is particularly strong on the entry–exit margin, which is arguably of particular importance for creative destruction.

## 5. Labor Market Institutions and High-Impact Entrepreneurship (HIE)

How should labor markets best be regulated and organized in order for the economy to benefit the most from the dynamic process described above? I will focus on three areas deemed to be of particular importance for the economy's ability to promote HIE and thus to generate HGFs:

(i) labor market regulations, especially concerning job security mandates;
(ii) wage-setting institutions;
(iii) the social insurance system including health care insurance.

### 5.1 The regulation of labor markets

The empirical findings about churning and restructuring give reason to believe that strict employment security provisions and other regulations that restrict contracting flexibility are more harmful for enterprises that would like to grow rapidly than for mature firms and firms without growth aspirations.

Stringent regulation of the employment and dismissal of employees bars entrepreneurs from adjusting their workforce in correspondence with market fluctuations, thereby increasing risk in potential high-impact entrepreneurial ventures (Acs 2008) and HGFs (Audretsch et al. 2002). Moreover, both the rate at which workers separate from jobs and the rate at which employers destroy job positions decline with the size, age and capital intensity of the employer (Bartelsman et al. 2004). Hence, a low level of labor market regulations increases the flexibility of high-risk entrepreneurial companies, making the evolution of new companies into HGFs

more likely. *Figure 1* illustrates this tradeoff by depicting the relationship between the strictness of employment protection and the rate of high-growth expectation early-stage entrepreneurship, i.e., new firms and firm owners with a willingness and potential for high growth. The figure clearly shows that stricter employment protection is associated with a lower share of this form of entrepreneurship.

[Figure 1]

Furthermore, the relative advantage of being an employee decreases with weak employment protection legislation, making it more favorable to undertake entrepreneurial projects as self-employed. Generous, far-reaching labor protection legislation increases an employee's opportunity cost of changing employers or leaving a secure salaried job to become self-employed. Given that initiatives resulting in HIE and HGFs often require a change of workplace, far-reaching labor protection legislation should be avoided.

If regular employment is highly regulated, strong incentives arise to devise arrangements to circumvent the regulations. In several European countries, new routines of flexibility have emerged. The most important forms include increased self-employment, the emergence of an underground economy in which the government refrains from enforcing regulations, and increased reliance on temporary employment.

For the self-employed, compensation and working hours are totally unregulated and no labor security is mandated. Transitions from paid employment to "dependent" self-employment—when a former employee acts as a sub-contractor to a previous employer—increase with stricter protection. The share of the workforce on temporary contracts and employment in staffing service firms is also on the rise virtually everywhere in Europe. Staff on temporary contracts are less motivated to invest in firm-specific skills and commit as strongly to the firm as employees on permanent contracts. Thus, it becomes less likely that the firm will be able to attract workers who have or are inclined to develop highly valued skills.

Also, very small firms may be able to avoid unionization and the signing of collective agreements, and therefore benefit from greater freedom of contracting. This room of maneuver is likely to be lost once the firm size exceeds a certain threshold. Therefore, these evasive measures do little to help HGFs and welfare-enhancing structural transformation. Instead, they tend to create a system with a large share of economic activity occurring in small firms without the ability or the aspiration to become HGFs.

### 5.2 Wage-setting institutions

Wage-setting institutions may impact the scope for cooperation between key actors with complementary competencies, and the conditions for (potential) HGFs and structural transformation through several channels. In particular, the wage compression associated with centralized wage bargaining is likely to disadvantage potential HGFs, since an artificially compressed wage structure makes it more difficult for profitable high-productivity firms to use

salaries as an incentive to recruit new productive employees, making expansion more difficult to realize. Minimum wages set above the market equilibrium level, on the other hand, forces low-profit firms with low productivity out of business. Halabisky et al. (2006) demonstrate HGFs to be low-salary companies in the beginning of their life cycle and large firms in slowly growing industries to be high-salary companies. When young potential HGFs realize their growth potential and begin to grow rapidly, salaries start to grow fast. This finding suggests that a compressed wage structure pegging minimum wages above the market equilibrium level tends to choke potential HGFs in their infancy. They cannot bear high wage costs in the beginning of their life cycle when still developing their product and in the early phase of commercialization before the firm has become more productive and could afford to pay higher salaries.

Empirical studies find HGFs to be younger and smaller than other firms on average. Wages are consistently higher at larger firms, even after exhaustive efforts to control for observable worker characteristics and other job attributes (Oi and Idson 1999). Old firms pay higher wages than new firms on average and industries in the low-end of the wage distribution are found in services, not in manufacturing. Hence, the negative effect of wage compression is reinforced by the fact that wage compression disadvantages firms that are most likely infant HGFs.

Also, centralized wage-setting institutions disadvantage potential HGFs by implementing standard rate compensation policies that closely tie wages to easily observable job and worker characteristics such as occupation, education, experience and seniority (Blau and Kahn 1996).

Given the large intra-firm differences in productivity and productivity growth, in particular in young and rapidly expanding industries and young firms (Caballero 2007), it follows that the functioning of the cooperation of different key actors needed for HGFs is impaired if wages are set in negotiations far from the individual workplace, and therefore not taking these idiosyncratic facts into proper account.

### 5.3 Labor markets and the social insurance system

By providing insurance for unfavorable outcomes, an extensive and generous public social insurance system can in principle encourage individuals to pursue entrepreneurial endeavors. This is a valid theoretical point shown formally by Sinn (1996), but it is an open question whether it is important empirically. To our knowledge, this hypothesis has yet to be tested empirically. At first sight, it seems clear that a generous welfare system should make it less costly to bear uncertainty as an entrepreneur or to move to a risky job in an entrepreneurial firm. In labor markets where job security is closely linked to job tenure, this may no longer hold; what matters is the opportunity cost, or how much an employee has to give up in terms of income security if she transfers to self-employment or a risky job in an entrepreneurial firm. For a tenured employee with a low-risk employer, the opportunity cost rises considerably in many OECD countries.

In many countries important benefits are tied to employment, such as health insurance in the US, for example. Many workers and potential entrepreneurs get "trapped" in large companies that provide generous health insurance for the employee and his/her family. Decoupling health insurance from employment would increase labor flexibility and reduce fears of losing adequate health insurance and other important benefits that may be tied to employment. In Denmark, generous welfare systems are combined with weak job security mandates, sometimes called "flexicurity" (Andersen 2005). This can be contrasted to the situation in Sweden, where somebody who voluntarily gives up a tenured position for self-employment may end up having no more security than what is provided by (means-tested) social welfare. Hence, the construction of the public income insurance systems in combination with the employment security legislation tends to penalize individuals who assume entrepreneurial risk. As a result, the opportunity cost of giving up a tenured position in Denmark is substantially lower than in Sweden.

Furthermore, the manner in which savings are channeled to various investment activities influences the type of business organization that can obtain credit. Pension funds are less likely to channel funds to entrepreneurs than business angels or venture capital firms. Hence, the composition of national savings is not neutral in its impact on entrepreneurship and business development. If the government forces individuals to keep a large part of their savings in a national pension fund system, small business credit availability will suffer relative to an alternative policy and institutional arrangements that allow for greater choice by individuals regarding their savings and investments.

A final point concerns the design of the supplementary pension system. Supplementary pension plans that are not fully actuarial and individualized contain elements of redistribution and risk-sharing across individuals in a group, like white-collar workers in a certain industry. The pension benefit level may be disproportionately tied to the wage level achieved towards the end of the professional career. Moreover, it may be difficult to transfer the accumulated pension assets when switching employer and or industry. To the extent that this is true, the mobility of (older) workers across firms is hampered and the hiring of elderly unemployed is discouraged.

### 5.4 Summary of the effects of labor market institutions

The degree of regulation and design of labor markets, wage-setting and social insurance systems influences incentives for potential HGFs and existing HGFs by restricting the freedom of contracting and thereby curtailing the possible combinations of factors of production. The need for experimentation in order to find more efficient factor combinations is likely to be large in new firms and industries, especially in potential HGFs. As a result, less mileage will be obtained from a certain entrepreneurial effort.

The most important channel by which labor market institutions affect HGFs and HIE is by hampering the supply of skilled workers to firms undergoing expansion and/or change. Given the large worker flows required in a dynamic economy, it is harder to recruit workers with the

competencies needed. The opportunity cost of leaving a tenured position goes up for the employees, while the fixed cost of hiring increases when a bad recruitment becomes more costly to reverse; there may be threshold effects that make firms hesitant to expand beyond a certain size, and a great deal of entrepreneurial effort may need to be expended on evasive rather than directly productive activities.

If temporary contracts are used systematically in order to circumvent regulations tied to permanent employment, industries and business ideas that depend on high-skilled labor and on-the-job learning are disadvantaged. Legal and institutional hurdles that prevent firms from laying off workers who underperform discourage potential HGFs from expanding. Depending on how labor markets are regulated and how these regulations interact with the social insurance system, the opportunity cost of becoming self-employed or starting a new business is affected. When social security benefits are closely tied to tenured positions and the employee has tenure at a low-risk employer the opportunity cost increases heavily.

One way to achieve portability of tenure rights is the Austrian reform of 2003, which converted uncertain firing costs for employers into a system of individual savings accounts, funded by an employer payroll tax (Hofer 2007). From the employers' perspective, this system guarantees certainty about the cost of any future dismissal at the time of hiring. For the workers, costs associated with labor mobility are reduced because they do not lose their entitlement to severance pay when quitting to take a new job.

Finally, it should be stressed that some degree of job protection promoting job stability is valuable, since it encourages work commitment and incentives to invest in firm-specific human capital.

## 7. Conclusion

The core driver of economic growth is the massive restructuring and factor reallocation by which new technology replaces old technology. To this effect countless decisions are taken to create and destroy production arrangements. Research shows that in order to increase aggregate employment by, say, two per cent in a year, it may be necessary to create 7 to 10 times as many jobs. Furthermore, research shows that a small share of all firms plays a disproportionate role in the economy, which motivates a policy emphasis on high-growth firms (HGFs) and high-impact entrepreneurship (HIE).

The successful commercialization of an innovation requires a chain of agents that work together in order to develop high-impact firms. The high degree of complexity in production combined with the specificity of human capital makes successful interaction of the various actors difficult but also highly rewarding when successful. Most potential HGFs fail, but the few that succeed account for a substantial part of growth and development. In this essay I have discussed how labor market policies should be designed in order to foster a favorable environment for high-impact entrepreneurship and high-growth firms.

Bringing together the specialized, non-transferable competencies of different actors into a well-functioning whole is invariably difficult, even with favorable institutions and public policies. Favorable economic institutions are of particular importance for the emergence of HGFs, both because of the sensitivity of competencies to good institutions and because of the high social return in terms of growth and job creation.

Rapid growth of some firms both requires entry of new firms from which to "recruit" high-growth candidates and the contraction and exit of other firms to free up resources for expanding firms. The essence of structural transformation is the reallocation of means of production from certain uses to more productive ones.

The most important channel by which labor market institutions affect HGFs is by influencing the supply of skilled workers to firms entering, undergoing expansion and/or change. Given the large worker flows required in a dynamic economy, favorable institutions facilitate the recruitment of workers with the competencies needed. Thus, the positive productivity effects from flexible labor markets only marginally emanate from transitions from non-employment to employment; the major effect comes from efficiency-enhancing job-to-job transitions.

Experimentation and selection not only takes place across firms, but also between workers and other key actors (notably entrepreneurs) whose productivity is only revealed while working. If temporary contracts are used systematically in order to circumvent regulations tied to permanent employment, industries and business ideas that depend on high-skilled labor and on-the-job learning are disadvantaged. Legal and institutional hurdles that prevent firms from laying off workers who underperform, discourage potential HGFs from expanding. Depending on how labor markets are regulated and how these regulations interact with the social insurance system, the opportunity cost of changing jobs or becoming self-employed is affected. When social security benefits are closely tied to tenured positions and the employee has tenure at a low-risk employer the opportunity cost increases sharply. If employees who establish their own business lose part of their social security entitlements, this can be expected to impact negatively on the recruitment of entrepreneurs.

Labor market institutions favoring reallocation and dynamism include portability of tenure rights, fully actuarial and portable pension plans, a full decoupling of health insurance from the current employer, decentralized and individualized wage-setting arrangements and government income insurance systems that encourage activation, mobility and risk-taking. Finally, it should be stressed that in order to be as efficient as possible labor market reforms should not be made in isolation, but be part of a comprehensive reform package including other areas, notably tax policy and competition policy.

## References


Acs, Z. J. (2008), "Foundations of High-Impact Entrepreneurship." *Foundations and Trends in Entrepreneurship* 4(6), 535–620.

Andersen, T. M. (2005), "The Danish Labor Market – from Excess to Shortage". In M. Werding, ed., *Structural Unemployment in Western Europe: Reasons and Remedies*. Cambridge MA: MIT Press.

Audretsch, D. B., A. R. Thurik, I. Verheul and S. Wennekers, eds. (2002). *Entrepreneurship: Determinants and Policy in a European–US Comparison*. Boston and Dodrecht: Kluwer.

Autor, D. H., W. R. Kerr and A. D. Kugler (2007), "Do Employment Protections Reduce Productivity? Evidence from U.S. States". NBER Working Paper No. 12860. National Bureau of Economic Research, Cambridge, MA.

Bartelsman, E., P. A. Gautier and J. de Wind (2011), "Employment Protection, Technology Choice, and Worker Allocation". DNB Working Papers 295, Netherlands Central Bank, Research Department.

Bartelsman E., J. Haltiwanger and S. Scarpetta **(**2004), "Microeconomic Evidence of Creative Destruction in Industrial and Developing Countries". World Bank, Policy Research Working Paper No. 3464.

Bartelsman, E., J. Haltiwanger and S. Scarpetta (2013), "Cross-Country Differences in Productivity: The Role of Allocation and Selection". *American Economic Review* 103(1), 305–334,

Bassanini, A., L. Nunziata and D. Venn (2009), "Job Protection Legislation and Productivity Growth in OECD Countries". *Economic Policy* 24(58), 349–402.

Blau, F., and L. M. Kahn (1996), "International Differences in Male Wage Inequality: Institutions versus Market Forces". *Journal of Political Economy* 104(4), 791–808.

Bloom, N., R. Sadun and J. Van Reenen (2012), "Americans Do IT Better: US Multinationals and the Productivity Miracle". *American Economic Review* 102(1), 167–201.

Bosma, N. S., and J. Levie, eds. (2010), *Global Entrepreneurship Monitor 2009 Executive Report*. Babson College, Universidad del Desarrollo, Reykjavík University and London Business School.

Caballero, R. J. (2007), *Specificity and the Macroeconomics of Restructuring*. Cambridge, MA: MIT Press.

Davis, S. J., J. Haltiwanger and R. Jarmin (2008), "Young Businesses, Economic Churning, and Productivity Gains". Kaufman Foundation Research Series: Turmoil and Growth.

Halabisky, D., E. Dreessen and C. Parsley (2006), "Growth in Firms in Canada, 1985–1999". *Journal of Small Business and Entrepreneurship* 19(3), 255–268.

Haltiwanger, J., S. Scarpetta and H. Schweiger (2008) "Assessing Job Flows across Countries: The Role of Industry, Firm Size and Regulations". NBER Working Paper No. 13920, National Bureau of Economic Research, Cambridge, MA.

Haltiwanger, J., S. Scarpetta and H. Schweiger (2010), "Cross-Country Differences in Job Reallocation: The Role of Industry, Firm Size and Regulations".Working Paper No. 116, European Bank for Reconstruction and Development, Office of the Chief Economist.

Henrekson, M., and D. Johansson (2009), "Competencies and Institutions Fostering High-Growth Firms". *Foundations and Trends in Entrepreneurship* 5(1), 1–82.

Henrekson, M., and D. Johansson (2010), "Gazelles as Job Creators – A Survey and Interpretation of the Evidence". *Small Business Economics* 35(2), 227–244.

Hofer, H. (2007), "The Severance Pay Reform in Austria ("Abfertigung Neu")". *CESifo DICE Report* 4/2007, 41–48.

Hsieh C.-T., and P. J. Klenow (2009), “Misallocation and Manufacturing TFP in China and India”. *Quarterly Journal of Economics* 124(4), 1403–1448.

Martin, J., and S. Scarpetta (2012),”Setting It Right: Employment Protection, Labour Reallocation and Productivity”. *De Economist* 160(2) 89–116.

Oi, W. and T. L. Idson (1999), ”Firm Size and Wages”. In O. Ashenfelter and D. Card, eds., *Handbook of Labor Economics, Vol. 3*. Amsterdam: Elsevier.

Petrin, A., and J. Sivadasan (2013), “Estimating Lost Output from Allocative Inefficiency, with Application to Chile and Firing Costs”. *Review of Economics and Statistics* 113(4), 811–839.

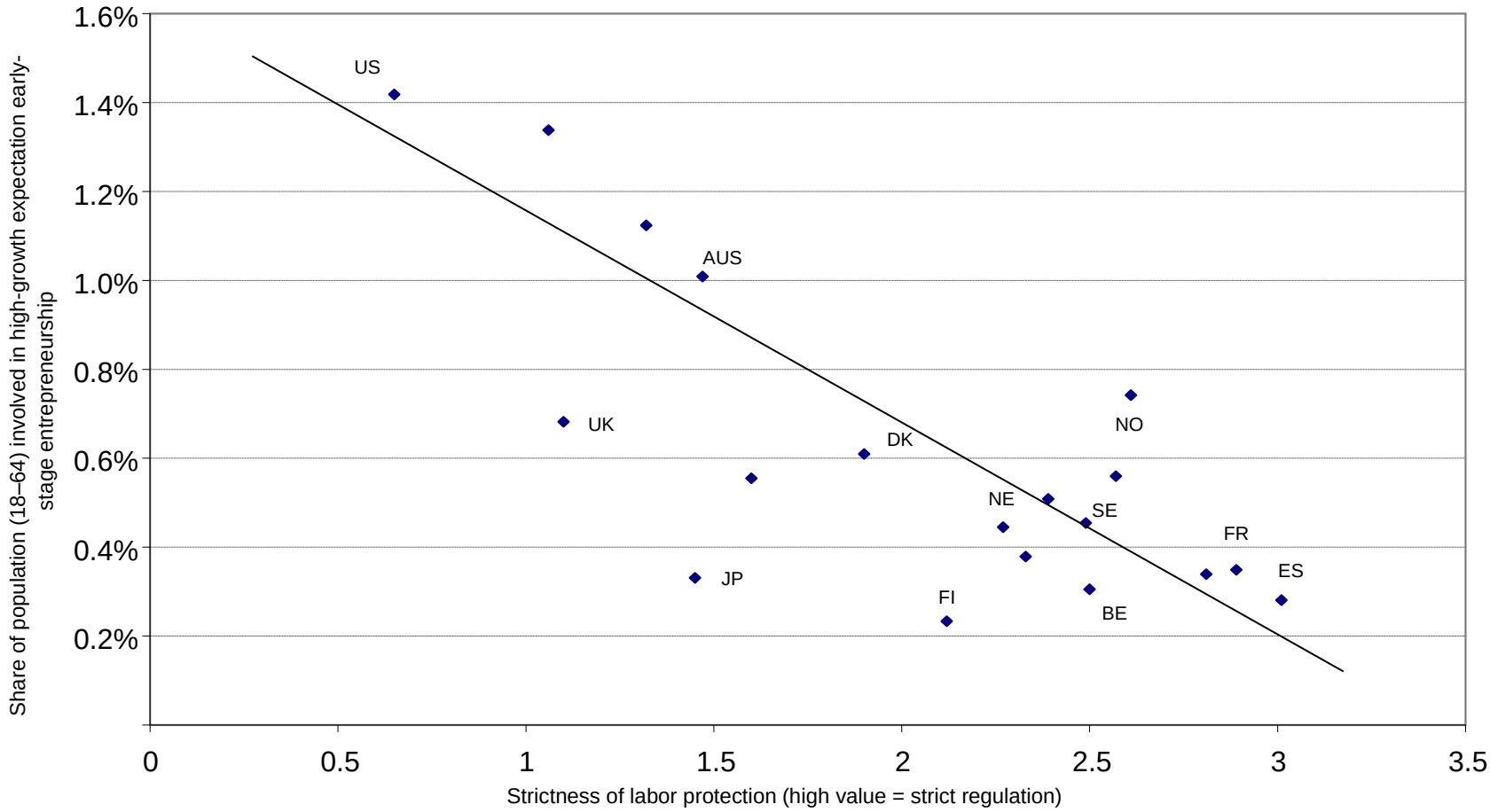
Pries, M., and R. Rogerson (2005), “Hiring Policies, Labor Market Institutions, and Labor Market Flows”. *Journal of Political Economy* 113(4), 811–839.

Sinn, H. W. (1996), ”Social Insurance, Incentives and Risk Taking”. *International Tax and Public Finance* 3(3), 259–280.

Skedinger, P. (2010), *Employment Protection Legislation: Evolution, Effects, Winners and Losers*. Cheltenham, UK and Northampton, MA: Edward Elgar.

Stangler, D. (2010), “High-Growth Firms and the Future of the American Economy”. Kaufman Foundation Research Series: Firm Formation and Economic Growth.

*Figure 1* Strictness of Labor Protection and High-Growth Expectation Early-Stage Entrepreneurship




*Note*: Employment protection refers to the 2004 OECD index (version 2), high-growth expectation early-stage entrepreneurship is the average over the 2004–2009 period according to the Global Entrepreneurship Monitor (GEM). $R^2 = 0.57$.
*Source:* Bosma and Levie (2010).