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Productivity measurement and enterprise bargaining in the public sector - the local government perspective

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ABSTRACT

The introduction of efficiency improvements and enterprise bargaining into local authorities has been severely hampered by a failure to agree on a method of measuring service productivity. This paper develops an outcomes measure of productivity which, it argues, meets both externally imposed cost-efficiency requirements and clients' needs for service effectiveness in terms of quality and equity in delivery. Applications of this measure to library and stautory planning services are provided.

INTRODUCTION

The past two decades have been a period of unprecedented change in the Australian economy due to its rapid exposure to the forces of international competition. Australian enterprises must now compete against a rising tide of imports, foreign investments and new entrants in order to maintain their market position. International competitiveness has become synonymous with improved efficiency and productivity, facilitated by the introduction of new technologies which have reduced costs and improved the quality of Australian products to world best practice standards. In order to achieve these improvements in productivity, manufacturers have had to convince workers and their union representatives to surrender a range of traditional work practices and wage structures to improve flexibility. In return, significant pay increases have been granted tied to measured improvements in enterprise-level productivity.

Inevitably this philosophy has permeated the public sector. Public service delivery units have been required to adopt concepts and processes originating in the private sector, including contestability, outsourcing, output measurement, focusing of services towards client or customer demand, delivering value for money, devolution of authority to operational units (or agencies in public sector parlance), and the adoption of private sector management structures. There has been radical reform of the public sectors in most English-speaking countries throughout the 1980s and 1990s with the broad aim of improving their efficiency of service delivery. This reform process has been a response to a number of factors including declining revenue stemming from tax reform and low inflation rates, ideological preferences towards small government and the need to reduce infrastructure costs to enhance the international competitiveness of local industry. In

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many countries, all three motives have operated simultaneously. The inevitable result has been that less resources are available to the public sector and service providers are under increased pressures to reduce their costs while improving the effectiveness of their delivery to client groups.

Public sector analysts have been critical of attempts to apply rigourous economic concepts such as productivity to that sector. Their arguments have focused on both the difficulties of measuring public service productivity and on the inappropriateness of using a physical output/input measure for complex service orientated activities (Weller et al., 1993: 2–4). Nevertheless, productivity improvements lie at the core of economic restructuring processes and strategies to improve productivity in the service sectors have been identified as essential to correcting the current slowing of growth rates in advanced economies (Harker, 1995: 3). There are both technical and political factors underlying the failure to agree on a method of measuring productivity in the public sector. The public sector delivers a diverse range of services, and most of these services are multifaceted containing quantity, quality and client target dimensions. In addition only a limited range of these services have a market value commensurate with private sector goods and services. These factors make it extremely difficult to measure productivity improvements in public services using private sector methodologies and hence it has been extremely problematic when measurements of public sector productivity have been suggested as the basis for enterprise bargaining agreements. These technical difficulties have meant that productivity measurement has become central to political debates between worker representatives and the Government as to the appropriateness and practicalities of implementing the public sector reform agenda and the merits of centralised versus agency-level wage determination.

In this paper, the process of public sector reform in Australia is examined to determine whether an acceptable measure of productivity can be developed which meets the need to measure efficiency improvements in the public sector and might also be used as the basis of wage bargaining in public service delivery, using local government services as an example. Local government is a microcosm of the public sector both in the range of services for which it is responsible and in the degree of political pressures for reform to which it has been subjected.

In Australia, local government tends to be at the end of the tax gathering chain as local rates are only a small proportion of total tax payments. Consequently, organisational changes to meet demands for improved efficiency have often been undertaken as an internal response to specific financial difficulties. This has provided local service deliverers with the luxury of developing responses appropriate to their internal needs. Such response strategies are likely to become more common as local government services are affected by general expenditure cuts in their grant income in the future. On the other hand, local government has been radically affected by politically motivated reforms in the State of Victoria, similar to those implemented in Britain and New Zealand. These reforms have involved a major emphasis on competitive tendering of services to improve efficiency, which has resulted in organisational change strategies being forced on service deliverers by external authorities. Local governments provide a variety of services ranging from relatively unskilled manual 'outdoor' work to professional services, such as planning and engineering. The spectrum of activities performed and the variety of pressures for reform experienced by this sector suggest that local government provides a useful context in which to examine the introduction of productivity concepts into the public sector.

THE PUBLIC SECTOR REFORM PROCESS

In Australia, the public sector reform process has exhibited two phases. Under (Hawke and Keating) Labor Governments, demands from private sector firms facing increased international competition that the efficiency of public infrastructure services (ports, rail, electricity, telecommunications) be improved initiated the reform process. This was supplemented by a need to improve the effectiveness of community services as people placed public expenditures under more intense scrutiny. Labor's response was to progressively open service provision to competition and to introduce performance measures for service delivery against established standards or criteria (Beazley, 1995: 292–93).

Under Liberal Governments, the pace of this reform has accelerated with economic imperatives being supplemented by ideological factors favouring smaller government. The budgets for most public services have been significantly reduced forcing delivery agencies to focus on controlling costs, with inevitable job losses. Under the (Howard) Commonwealth Government's Workplace Relations Act, new more individualised work practices are to be introduced which will allow variations in pay across service delivery agencies. These changes are aimed at "breaking down the differences between the public and private sectors as a forerunner to increased competition and greater efficiency" (*Australian*, 7 March 1997: 3). This approach is evident in the (Kennett) Victorian Government's changes to local government involving forced amalgamations, compulsory competitive tendering and mandated rate cuts (Hodgkinson and Castle, 1996: 30–31).

Implementation of these demands for cost cutting and increased competition were greatly facilitated by the managerial reforms of the 1990s. Public service agencies were required to be more accountable and to introduce private sector evaluation criteria. Organisational change usually involved a devolution of

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decision-making to the agency or unit level for a number of responsibilities which were once centrally-controlled, including financial management and staffing which have a significant impact on delivery costs. Thus as responsibilities at the operational level have expanded, there has been a parallel increase in the reporting requirements of these agencies back to their funding authorities, including an expansion of program evaluation mechanisms. Central authorities have required increased accountability of agencies through "a stronger focus on performance information in annual reports .... plus evaluations to test the relevance, efficiency and effectiveness of programs' (Beazley, 1995: 296).

The concept of accountability thus has been central to the implementation of these reforms. However, it has two, potentially conflicting, meanings when applied to public service delivery. Firstly, it relates to the demands of funding authorities and tax-payers for financial prudence in the management of public funds — a cost efficiency concept. Secondly, it relates to requirements that the service fulfils its program objectives to its client base, a service effectiveness concept. Appropriate evaluation indicators which meet these accountability requirements thus need to both provide central authorities with the information required to monitor the financial performance of the unit and also provide work groups with the information needed to develop internal management strategies to meet and improve their program objectives (Bartos, 1995: 390). In the public sector, quality or client service requirements are often established as 'standards' of service as part of the centrally driven accountability requirements and integrated into the regular performance indicators of the agency (Dept. of Finance, 1995: 4). Parallel improvement targets are set at the decentralised agency or unit level and used to analyse processes and develop strategies to improve service delivery in order to meet these client requirements (ibid.: 24).

While Government actions have tended to occupy most attention in analyses of this public sector reform process, the sector has also been affected by technological changes involving increased automation of services, ranging from power station operations to garbage collection, and the utilization of more sophisticated management information systems. Technological change has both exacerbated and facilitated the reform process. It has resulted in significant reductions in unskilled workers and middle managers while requiring an increased skilling and qualification of the remaining workforce. It has also generated the information systems needed to make quantative assessments of agency performance and to develop the indicators required to monitor the financial and program achievements.

Public service agencies are thus facing a number of external pressures which are forcing them to reassess the way in which they deliver their services. They are being called upon to take responsibility for achieving operational cost savings as well as for redesigning these activities to improve their capacity to meet client requirements. At the same time, they are under increased pressure to develop appropriate reporting mechanisms back to their funding authorities which measure their achievements in these areas. The public sector reform process thus emphasises cost efficiency and accountability as key concepts in measuring the productivity of the public sector.

THE MEANING OF PRODUCTIVITY

While the need to achieve productivity improvements have been driving this reform process, the intermingling of economic and political agendas and of cost constraint and service improvement objectives throughout much of the debate on productivity measurement in the public sector has resulted in confusion in the useage of the terms *performance* and *productivity* and of *efficiency*,

effectiveness and *quality of service.* An attempt to clarify the use of these terms is provided in this section.

Productivity is essentially a physical measure expressed as a ratio of outputs to inputs. In the private sector, this ratio can be readily converted into a value measure by converting outputs into revenue and inputs into labour and other costs. Thus improvements in productivity convert into improved profitability and generate a pool from which labour can be compensated for its contribution to this result in the form of pay rises. Pay increases linked to productivity improvements do not place pressure on the cost structure of firms and thus do not affect the international competitiveness of that economy.

As private sector philosophies and concepts have penetrated the public sector, service deliverers have been required to demonstrate improvements in productivity of a similar nature to that occurring elsewhere in the economy. However, these traditional productivity concepts do not readily translate into a public service milieu. Public service outputs are rarely sold for a commercial price, either being provided free and funded by general taxation revenues or provided at a highly subsidised charge. To further complicate any productivity calculation, public service agencies rarely produce a single unit of output but are rather responsible for a diverse range of services, often targeted towards a number of different client groups. A detailed discussion of these issues is provided in R. Green 1992(a) and 1992(b).

A number of devices have been used to translate productivity concepts to the public sector. It is accepted that productivity can only be measured at an agency or work group level. This decentralised approach allows each agency's primary activity to be defined as units of output and to ensure a relatively homogeneous set of labour skills are included in the input factors. Even so, most public service work groups will require more than

one activity to be included in this output as illustrated in the examples further in this paper.

Performance is usually measured by indicators which provide a separate quantative measure for each aspect of a unit's activities and has often been used as a loose measure of productivity. These are preferred by public service work groups and their union representatives as they can incorporate indicators for each of the multifaceted aspects of the unit's work program (Green, 1992(a): 12). They are also very useful in the process of developing new strategies and monitoring the success of new work practices in the early stages of introducing a 'productivity culture' to the public sector (McMahon, undated: 2). Public sector performance indicators however, rarely translate into a financial pool from which to fund pay increases in a similar manner to the private sector. Thus the need to measure productivity again becomes important when productivity-based wage bargaining is mooted for public service delivery units.

Technical efficiency generally refers to increases in the output/input ratio and is thus consistent with productivity and cost-orientated concepts of accountability, which can be achieved by either expanding output or reducing inputs. *Allocative efficiency* refers to a reorientating of the unit's service mix to better meet the requirements of its clients. Allocative efficiency is thus related to social accountability or the ability of the organisation to meets the demands of the interests which it serves. *Effectiveness,* on the other hand, refers to improvements in the internal capacity of the unit to deliver services or in the quality and targeting of that service (Dalton and Dalton, 1988: 22–25). Effectiveness measures thus require the inclusion of quality factors, a concept well recognised in productivity analysis but which has been exceedingly difficult to measure (Payson, 1994: 1–32).

Few public service agencies object to the idea of improving their productivity in terms of the efficiency and effectiveness of

service delivery, particularly if a pay rise is contingent upon demonstrating such improvements. However, the concept of productivity which is used to measure this improvement will differ depending on whether it is chosen by that work group as part of a voluntary internal organisational change process or whether it is required to meet the demands for efficiency improvements imposed by an authority external to the organisation. The concepts used to measure productivity will also tend to change when that organisation is placed under pressure to become more cost accountable and adopt a productivity rather than a traditonal service operational culture (Dalton and Dalton, 1988: 21).

When organisations are given the freedom to determine their own productivity measures, they prefer to focus on those characteristics over which they have greatest control. In the local government context, this implies that more routine services such as waste collections, parks and gardens and road maintenance, will opt for particular technical efficiency measures consistent with their pre-existing culture. They would thus seek to have their operations evaluated in terms of maximizing the volume of output achieved from a given volume of resource inputs. Professional service delivery units such as libraries, development planners and community services, would generally prefer to use social effectiveness or quality of service measures (ibid.: 45–6).

The current public sector reform process challenges these traditional foci of service delivery by demanding that public services be evaluated against productivity measures which reflect the demands of the more competitive economic conditions and the new resource-constrained political environment. These pressures emphasise cost minimisation and smaller government. Consequently, both routine and professional services will be required to measure productivity in terms of minimizing the resource inputs used to achieve a given volume of output (ibid.).

This places increased pressure on service delivery units to undertake organisational change involving changed work practices, the introduction of new technologies, reduced labour numbers, etc in order to meet these new demands to be cost accountable for the public revenues allocated to each service area (Schmertz, 1981: 163_65). The extent to which public service organisations actually change the nature of their service delivery will depend on the relative strengths of that organisation to maintain their traditional operational culture versus the degree of radical reform forced through the political agenda driving change towards a 'productivity culture'.

This struggle often revolves around the inclusion of a quality of service dimension in productivity measures. Simple cost minimization measures of productivity ignore social effectiveness factors (Armstrong, 1995: 311). Effectiveness includes quality of service factors (e.g. correctness of decisions) and equity factors to ensure services are delivered to the correct segments of the client group (Brudney and Morgan, 1988: 164–67). Social effectiveness or quality of service factors are important to both public service deliverers and the client groups to whom they are ultimately accountable (Belgrave, 1995: 310–11). The failure to include quality factors in service evaluations will reduce the motivation of workers to undertake the changes necessary to improve public sector efficiency if an essential element of their work process is ignored in calculating wage increases.

This debate is not readily solved with a centralised wage settlement process. Central funding authorities are primarily concerned with general cost savings strategies while agency specific social effectiveness issues are crucial in service improvement strategies acceptable to each operational unit's work forces. It is thus difficult to develop centralised productivity-based wage systems when conflicting concepts of productivity are held by each negotiating party. More scope exists

to introduce productivity-based wage increases when negotiations are held at the decentralised agency level where some commonality of purpose exists among workers and management. However, such systems cannot be introduced without resolving the question of how productivity is to be measured and pay rises calculated in each service delivery context. Acceptable productivity measures for public services must incorporate both cost minimisation and effectiveness criteria, ie. it must measure agency outcomes (rather than output) to input ratios (Harker, 1995: 12). This requirement has created major obstacles to introducing productivity-based wage bargaining in the public sector.

THE DEVELOPMENT OF OUTCOMES MEASURES OF PRODUCTIVITY

It is now accepted that measures of productivity should include quality factors and reflect the objectives of service agencies to be consistent with the overall trust of public sector reform in Australia, i.e., outcome measures need to reflect client expectations, the objectives of the program and professional standards of quality (Dept of Finance, 1995: 48). This then raises the question of whether measures of cost efficiency, quality and equity can be included in one productivity measure. Attempts to solve this dilemma initially involved the use of separate efficiency, quality and equity measures for each service area to be used in an overall program evaluation review. These were latter developed into indices where outcomes were measured by incorporating a number of cost and program objective indicators.[1]

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1 For example, a benchmark value for residential building approvals was calculated as: Number of decisions issued within target response time (%) times Customer satisfaction rating (1_5) divided

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However, performance measures, despite their value in guiding and monitoring organisational change, are less useful as a means of calculating the capacity to pay wage increases. Where enterprise bargaining has been introduced into local government, the process has initially involved pay rises paid on an undertaking to commence organisational change and develop performance indicators. Productivity-based wage increases or the payment of productivity bonuses generally have been confined to labour-intensive, lower skilled operations, usually after these have been subjected to substantial job-shedding, conversion to business units and competitive tendering regimes. For example, Liverpool City Council's latest enterprise agreement contains provision to pay operational staff in the Liverpool City Works business unit three wage increases between 1995 and 1997, one of which involves a 3% rise dependant on their achieving a 10% reduction in road and building maintenance costs and that vehicle repairs occur at standards comparable with outside industry (Hodgkinson and Castle, 1996: 120).

Workers even in relatively routinized service units have expressed concern at the impact of these rigourous cost cutting measures of productivity on the quality of their work (Small, 1995: 4). Conversely, a focus purely on social effectiveness or quality measures as preferred by professional service units may result in increasing unit costs, an unacceptable result within the current political environment (Dept of Finance, 1995: 11). Productivity measures which will be acceptable to all parties for use in enterprise bargaining negotiations thus need to include quality / service delivery indicators and cost efficiency measures.

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by $ Unit costs. The index value with the best results in a pilot test was 1.871. This was used as a benchmark against which the performance of other municipalities could be measured (DHRD, 1995: 8.7)

Given public sector resource constraints and thus the inability to undertake all desirable improvements to an agency's activities, this implies that acceptable outcomes measures need to reflect that combination of unit cost savings and quality improvements most valued by the service's client base.

Performance indices previously used to guide the organisational change process can be converted into productivity measures by selecting output measures which are representative of the agreed objectives of the program or work unit and weighted by a quality coefficient reflecting the unit's actual achievement against a benchmark or target (Brudney & Morgan, 1988:163–6). This outcome value is then divided by an input value, such as number of labour units employed to develop a [labour] productivity measure. Movements in these quality adjusted productivity measures could then be used as the basis of pay increases.

However, it has been argued that work units evaluated by such measures will tend to focus on those services and client groups where they can improve delivery most expeditiously. Thus attempts to use productivity measures in evaluating work units and especially where they are used to determine pay rises could discriminate against service delivery to difficult clients where their service requirements would reduce the unit's outcome/input scores. Equity or distributional objectives can be included in productivity measures by weighting outcomes for each category of client by degree of difficulty. In the example footnoted above, the target completion time for development applications varied between 3 and 12 weeks depending on the type of application. Weights can be determined subjectively, based on observation and experience or through regression of successful outcomes against demographic characteristics (ibid.: 169–72).

Productivity measures of public service outcomes will thus need to include volume outputs, quality coefficients and equity

weights and then divided by a resource base reflecting either simple labour inputs used to deliver that service or by an index comprising both labour and capital inputs. Input indices will become more important if significant technological changes are involved in the work practices needed to deliver the required productivity improvements.

Such productivity measures are in grave danger of becoming so complex that their usefulness as a meaningful measure of improvement in a work unit's performance is questionable. This problem can only be overcome by agreeing a very small number of activities as being core to that unit's objectives and as being representative of the full range of activities undertaken by that unit. Quality coefficients and equity weights are then developed for these activities. Performance indicators can be retained to monitor any other activities considered to be essential in evaluating that unit or agency.

However, the use of these productivity measures in enterprise bargaining negotiations still has to confront the issue of converting these physical measurements into monetary values. Conceptually, labour inputs are relatively easily expressed in dollar terms as wages costs. Depreciation values for capital items consumed during that period can also be calculated using normal accounting procedures. The question of whether material costs should be included can be negotiated, depending on whether they are a targeted element of improvement strategies for that unit. Consequently, per unit cost measures can be readily constructed for most public services.

Conversion of outcomes to monetary values is often impossible, except for cases subject to full user charges or contracting-out. Outcome improvements involving increased volumes of free services, subsidised service charges or improved service quality do not convert to dollar values, although they do represent an improvement in 'value for money' to tax-payers.

Increased outcome values of productivity can be measured and used to justify wage increases. However, the question of the source of funding to pay these increases still has to be addressed as discussed further below.

APPLICATION TO LOCAL GOVERNMENT SERVICES

The above discussion illustrates that conceptually it is possible to construct productivity measures which reflect service outcomes but still present these on a meaningful per unit cost basis. Productivity improvements can occur through reductions in unit costs either by reducing total resource inputs for a given volume of output (cost minisation), by increasing the volume of output for a given resource input (cost efficiency) or through improvements in the quality or social effectiveness of service delivery. Outcome measures of productivity thus meet the needs of the internal organisation to monitor the effectiveness of their change strategies and of the external authority for demonstrated accountability in the use of public funds. They also result in a measurement of productivity which is consistent with productivity based wage negotiations as currently used in the Australian industrial relations system.

Improvements in service outcomes under a regime of resource constraints imply a trade-off between costs and quality (Dept of Finance, 1995: 39). To illustrate this point, two examples of typical local government services are provided. The first example of library services shows how quality factors can be included to develop an outcomes measure of productivity. The issue of how trade-offs between cost and quality improvements can be accommodated within productivity measures is demonstrated in the example of the planning unit.

In terms familiar in modern vision statements, library services do not involve simply lending materials but rather lending

materials drawn from a pool of resources which meets the needs of their users in a friendly and efficient manner. Strategies to improve library outcomes so defined could include (1) increasing the volume of materials lent, (2) restructuring the resource pool to better meet the needs of particular client groups (e.g. non-English speaking background, young people), (3) adding services for new client groups (e.g. the unemployed, illiterate), or (4) improving the attitudes of librarians towards users (Yorke, 1986: 279–80).

To determine the most appropriate strategy, library users should be consulted to determine which attribute they most value and prefer to see improved, assuming the available resource pool for that service area is fixed. Thus by directing organisational change strategies towards those aspects of service delivery most valued by users, productivity improvements will reflect both cost efficiency gains and social effectiveness or quality improvements. They will thus meet internal organisational preferences for quality of service improvements plus external pressures for accountability and cost minimisation.

A typical outcomes productivity ratio for library services could thus be:

$$\frac{\text{Contacts [loans + inquiries(k') + participants(k'')]} \times 1 + \text{Client Satisfaction Ratio}}{\text{FTE Staff}}$$

where inquiries could be weighted by k' to reflect the relative time intensity of inquiries versus loan processing determined on the basis of observation and experience (time monitoring). Participants can be divided into different population segments and weighted (k'') to reflect the relative difficulty of servicing different groups. As library services are labour intensive and involve professionally trained workers with set hours of work, inputs can be represented simply by staff numbers measured as full time equivalents (FTE). The above formula will thus provide a labour productivity measure.

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For example, a library staff of 10 FTE originally have, after weighting, 5,000 contacts with the public per week with a satisfaction weighting of 80% (1.8). Their outcome value is 5,000 × 1.8 = 9,000 and their labour productivity ratio is 9,000/10 = 900. In the second period, following changed work practices, the same 10 FTE have 5,500 contacts per week with a satisfaction ratio of 85% (1.85). Their outcome value is now 10,175 and their labour productivity ratio is 1,017.5. Thus their productivity has increased by 13%, which could form the basis of a negotiated wage increase.

Libraries clearly also perform other, behind the scenes, activities such as reshelving, cataloguing, new materials ordering. However, in this example, the volume indicators have been chosen to reflect the 'client contact' role of libraries consistent with the client focus now prevalent in local government. Inefficiencies in these support functions would result in reduced capacity to deliver these contact services. Thus, to achieve a productivity improvement, strategies to improve support functions need to be developed as well as strategies for the functions specially targeted in the agreed measure.

The above example illustrates how changes in productivity can be measured as changes in a service unit's outcomes as a result of either changes in the volume or the quality indicator, resulting in a reduced per unit service costs. However, some productivity improvement strategies may involve trade-offs between volumes of output (e.g., increased throughput) and quality of service (e.g., increased accuracy) or between increasing outcomes or reducing inputs (e.g., labour).

Statutory planning units are responsible for processing development approvals, including informing applicants of requirements prior to submission of an application, and negotiating with objectors before submitting their recommendation to Council. In addition, this workgroup is responsible for

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investigating complaints from the public regarding breaches of planning regulations. The types of applications dealt with can be weighted (k) to reflect their degree of difficulty. The number of recommendations made and complaints investigated with a time period form the volume indicator. Speed of processing has often been suggested as an output indicator for this service area, as discussed in the footnoted example above. However, slow processing and the need to defend appeals due to poorly prepared responses will result in a lower number of completed recommendations and thus these factors will appear indirectly in the suggested volume indicator.

The correct recommendation for a development application is not necessarily approval. Thus a quality indicator needs to be included which ensures that recommendations are consistent with Council's existing strategic objectives in this area. A quality indicator reflecting the percentage of recommendations from the workgroup accepted by Council is suggested, rather than a client satisfaction rating, in this example. Ideally, Council should reflect community opinions on municipal development matters.

A possible labour productivity measure is:

$$\frac{\text{Recommendations(k)} + \text{Complaints} \times \text{\%Recommendations Accepted}}{\text{FTE Staff}}$$

For example, 12 planners may be able to complete 150 development applications and complaints per month with an acceptance rate of 50%. An improvement can be achieved by either increasing the number of applications processed or improving the acceptance rate. With no change in work practices or inputs, the same planners could process 125 applications with an acceptance ratio of 60%. Both these scenarios would represent the same quality adjusted outcome of 75. The strategy chosen will depend on the priorities for this service. Each would reflect a labour productivity level of 6.25.

Productivity could be improved by either increasing throughput ie. by processing 180 applications while retaining the 50% acceptance rate, or by increasing quality ie. by still processing 150 applications per month but now achieving a 60% acceptance rate. In both cases, the new outcome value would be 90 and labour productivity would be 7.5, an improvement of 20%. However, the same productivity improvement could be achieved by maintaining the outcome value at 75 but by reducing staff numbers to 10. All three strategies produce the same per unit cost reduction. The chosen strategy will depend on the relative value placed on speedier processing versus improved accuracy (and thus being less vulnerable to rejection by Councillors) versus the pressures for cost savings by external forces due to financial constraints.

The above examples demonstrate how changes in labour productivity for service units can be measured and used as the basis of wage negotiations. A pool of funds generated by these productivity improvements needs to be identified. This will include actual per unit cost savings due to reduced resource usage and increased fees and charges obtained from the increased output where applicable. However, as argued above, many of the productivity gains will flow to the client base free of charge as increased output or quality of service without a commensurate increase in costs. These public gains can be measured by the suggested productivity measures and used to justify inclusion of increased rate and grant incomes obtained from the municipality's growing population and business base into the wage negotiation pool (Hodgkinson and Castle, 1996: 111). Municipalities which do not have a growing population or economic base must either use these measures to negotiate a rate increase in return for improved services or accept that productivity increases must necessitate a constant outcome to be achieved from reduced inputs, and hence cost efficiency savings.

Once a gainsharing pool is identified, it is incorrect to assume that the entire pool can be used to fund wage increases. Any improvement in productivity will be the result of the combined contribution of labour, the use of new equipment and technologies and better management practices. Thus the share of the pool used for wage increases will become a major aspect of enterprise bargaining wage negotiations, based on the nature of the improvement strategies developed throughout the organisation. In the few examples where this type of negotiation has occurred in Australian local government to date, a convention of sharing the pool, one-third to fund wage increases, one-third to fund new equipment purchases and one-third to cover corporate overheads has emerged (ibid.: 109).

CONCLUSION

The above discussion provides an overview of how the use of productivity concepts has developed in the Australian public sector. Local government delivery units, as with other public service providers, have been suspicious of using rigourous productivity measurements, more due to a concern that it would focus their activities simply on cost cutting strategies at the expense of quality factors rather than a rejection of the need to improve efficiency itself. This concern is reinforced by the increasing emphasis on expenditure cuts by their funding authorities and the introduction of radical reforms such as compulsory competitive tendering in some jurisdictions.

A method of measuring public service productivity which includes several quality dimensions is suggested. This method both meets the demands of funding authorities for greater accountability and cost efficiency in the use of public funds and provides work groups with a means of monitoring their internal strategies which includes the main variables agreed with their

client groups as being essential to improve service delivery. Further, it provides a method of measuring productivity which is consistent with the introduction of productivity-based wage bargaining into local government services on the same basis as currently occurs in private sector firms.

An increased focus on decentralised wage bargaining, increased competition and improved efficiency in public service delivery and productivity measurement can be expected as the Australian Government's new Workplace Relations Act takes effect. The use of quality enhanced outcomes measures of productivity as suggested here offers public service agencies the opportunity to conform to these requirements while ensuring the quality of their services continues to meet client needs and professional standards.

Local government service delivery units have an advantage over other public sectors in that a significant proportion of their income is not dependant on tax revenues allocated by external authorities. This provides them with the feasibility to develop organisational change strategies suitable for local requirements. The concept of a gainsharing pool from which to fund wage increases offers an alternative mechanism to full user charges and compulsory competitive tendering regimes which represent the more obvious means of introducing productivity-wage bargaining into local government.

REFERENCES

Armstrong, Pamela K. (1995), "A Model For Analyzing Quality in the Service Delivery Process", in Patrick T. Harker (ed.), *The Service Productivity and Quality Challenge*, Kluwer Academic Publishers, Dordrecht, The Netherlands: 311–42.

Australian, The, March 7, 1997, "PS unions promise reform showdown", p. 3.

Bartos, Stephen (1995), "Current Developments in Performance Information", *Australian Journal of Public Administration* 54(3): 386-392.

Beazley, Kim (1995), "The Public Sector and Change: The 1994 Garran Oration", *Australian Journal of Public Administration* 54(3): 291–298.

Belgrave, John (1995), "Providing a World-Class Customer Service", *Australian Journal of Public Administration* 54(3): 310-316.

Brudney, Jeffrey L. and David R. Morgan (1988), "Local Government Productivity: Efficiency and Equity", in Rita Mae Kelly (ed.), *Promoting Productivity in the Public Sector: Problems, Strategies and Prospects*, St. Martin's Press, New York: 161–76.

Dalton, Thomas C and Linda C. Dalton (1988), "The Politics of Measuring Public Sector Performance: Productivity and the Public Organization", in Rita Mae Kelly (ed.), *Promoting Productivity in the Public Sector: Problems, Strategies and Prospects*, St. Martin's Press, New York: 19–65.

Department of Finance (1995), *Quality for our Clients: Improvement for the Future*, Department of Finance, Canberra.

DHRD, Department of Housing and Regional Development (1995), *Benchmarking for Local Government: A Practical Guide*, September.

Green, Roy (1992a), "Analysis and Measurement of Workplace Productivity" in *National Wages Policy and Workplace Wage Determination*, ACCIRT Monograph 7, University of Sydney.

Green, Roy (1992b), "Productivity and Comparability in Public Service Pay", *Labour Economics and Productivity* 4 (2): 176–202.

Harker, Patrick T. (1995), "The Service Quality and Productivity Challenge" in Patrick T. Harker (ed.), *The Service Productivity and Quality Challenge*, Kluwer Academic Publishers, Dordrecht, The Netherlands: 1–10.

Hodgkinson, Ann and Robert Castle (1996), *Productivity Wage Bargaining in Local Government*, Labour Market and Regional Studies Centre Monograph 2, University of Wollongong.

McMahon, F. (McMahon and Associates) undated, *Productivity Improvement Program*, Municipal Association of Victoria, Melbourne.

NLGPC, National Local Government Productivity Council (1993), *Measuring Productivity in Local Government*, Melbourne, May.

Payson, Steven (1994), *Quality Measurement in Economics, New Perspectives on the Evolution of Goods and Services*, Edward Elgar, USA.

Small, Frank and Associates (1995), *Moving LCC Staff Towards the Ideal: Liverpool City Council Employee Opinion Survey*, prepared for Liverpool City Council, September.

Schmertz, Eric J. (1981), "Public Sector Productivity and Collective Bargaining: The Case of New York City", in Nabil R. Adam and Ali Dogramaci (eds), *Productivity Analysis at the Organisational Level*, Martinus Nijhoff Publishing, Boston: 163–74.

Yorke, David (1986), "The Quality of Library Services, in B. Moores (ed), *Are They Being Served? Quality Consciousness in Service Industries*, Philip Allen, Oxford: 278 –87.

Weller, Patrick, Margaret Gardner, Neal Ryan and Bron Stevens (1993), "The Role of the Public Sector: Implications for the Australian Public Service", *Canberra Bulletin of Public Administration* 72: 1–23.

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