REVISTA LATINOAMERICANA DE

DESARROLLO ECONÓMICO

Latin American Journal of Economic Development

EDICIÓN ESPECIAL

CRECIMIENTO ECONÓMICO Y MOVILIDAD SOCIAL

Economic Growth and Social Mobility

JULIO 2005

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Edición especial **Julio 2005**

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Diseño Gráfico:
SALINASÁNCHEZ / 2433085

Diseño de tapa:
Lykke E. Andersen

Impresión:

IMPRESIONES SOIPA LTDA
SOCIEDAD IMPRESORA DE PAPELES LIMITADA
Av. Hugo Estrada Nº 26 (Miraflores)
Teléfonos 222 8593 - 224 2538
La Paz - Bolivia

Depósito Legal:
4 - 3 - 76 - 03

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CONTENIDO

PRESENTACIÓN

Hace no más de dos décadas, los economistas estaban concentrados en el análisis de los ciclos económicos y la efectividad de las políticas para reducir los efectos negativos de las crisis de corto plazo. En ese marco, el trabajo *Increasing Returns and Long Growth* (1986), de Paul Romer, se constituyó en un punto de quiebre que llevó a los economistas a levantar la cabeza y ver el horizonte de largo plazo. Como en su momento Lippershey nos proveyó de un instrumento para ver a la distancia, la revolución de las expectativas racionales, comandada por Lucas, Barro, Prescott y Sargent, nos dio el instrumental para relanzar el análisis del crecimiento económico. Hoy la teoría del crecimiento ha vuelto a atraer la atención de los economistas y de quienes consideramos que apostar al futuro es la mejor opción.

Según el premio Nobel de Economía Robert Lucas, una de las claves para entender el crecimiento económico y explicar los exitosos procesos de desarrollo que lograron algunos países en las últimas décadas es la inversión en capital humano. El desafío de Bolivia, al igual que de otros países que quedaron rezagados en la carrera hacia un mayor bienestar, es encontrar la manera en que la sociedad vea más allá del corto plazo, que sea capaz de apostar al capital más valioso con que cuenta: sus jóvenes y niños. Los trabajos que se incorporan en esta edición especial de la Revista Latinoamericana de Desarrollo Económico tienen este propósito.

Nuestro agradecimiento al Rector de nuestra Universidad, R.P. Dr. Petrus Johannes María van den Berg, OSA, por su constante apoyo a las actividades del IISEC, y a las autoridades de la UCB, por su respaldo, de manera especial al Mtro. Carlos Rosso. Asimismo, nuestro mayor reconocimiento a la Corporación Andina de Fomento (CAF), por su generosa colaboración. Esta publicación no sería posible sin el aporte de los colegas que escribieron los trabajos que se hoy se publican y los que nos apoyaron como tribunales para evaluar los trabajos de la revista. A ellos, las expresiones de nuestra mayor gratitud.

Alejandro F. Mercado
Director IISEC-UCB

El crecimiento económico en Bolivia (1952–2003)*

*Alejandro F. Mercado***
Jorge G.M. Leitón
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Resumen

En el análisis estadístico-descriptivo de la serie 1952-2003 para la economía boliviana se observó que el comportamiento tendencial es dominante respecto al cíclico, por lo que la discrecionalidad de las políticas económicas no coadyuva al crecimiento económico. De esta manera, adquiere importancia la estimación de la tasa natural de crecimiento para Bolivia, y los resultados encontrados al respecto muestran que la tasa de crecimiento natural de la economía boliviana para el periodo 1990-2003 alcanza el 4.04 por ciento anual. De igual forma, al realizar el análisis de corto plazo, vemos que, ante la presencia de *shocks*, la economía boliviana retorna a su tendencia de largo plazo en un periodo promedio de cinco trimestres. Finalmente, los resultados encontrados muestran fuertes rigideces que enfrenta la economía boliviana para impulsar el crecimiento económico.

Abstract

Since 1952 to 2003, the economic performance of Bolivia revealed that the economic growth is led by a trend behavior over the cycle. This result points out to the discretional behavior of the economic policies that diminishes the effect of fiscal and monetary policies on the country's economic growth. Therefore, the estimation of the long run Natural Growth Rate for the Bolivian economy becomes important and the results obtained for the 1990-2003 period, show a yearly long run natural growth of four

* Agradecemos a nuestros colegas de la Universidad Católica Boliviana que leyeron el trabajo y nos hicieron sugerencias, así como a un árbitro anónimo que tuvo la gentileza de proporcionarnos críticas y correcciones. Como no podía ser de otra manera, los errores e imprecisiones son responsabilidad de los autores.

** Director, Jefe de Investigaciones e Investigador del ISEC, respectivamente.

per cent. Moreover, within the short run analysis, controlling for shocks in the economy, on average the Bolivian economy should return to the long run equilibrium within five quarters. Finally, all the results point to strong rigidities that the Bolivian economy faces against economic growth.

1. Introducción

Muchas explicaciones de la crisis económica por la que hoy atraviesa nuestro país descansan en la evaluación de la gestión de la política económica de la actual administración gubernamental o, en otros casos, hacen referencia a los programas de ajuste y transformación llevados a cabo entre mediados de la década del ochenta y mediados de la década del noventa, respectivamente. Sin buscar invalidar dichos análisis, que evidentemente nos proporcionan importantes elementos para comprender los problemas actuales, consideramos que una parte de los mismos trasciende la problemática del corto plazo y se inscribe en el comportamiento económico de largo plazo. Asimismo, si bien la gestión económica de corto plazo puede, en ciertos casos, contribuir de manera positiva, consideramos tanto o más importante identificar los factores de largo plazo para encaminar a nuestro país por la senda del crecimiento.

En ese marco, la presente investigación tiene básicamente tres objetivos: primero, identificar el comportamiento de la economía boliviana en el largo plazo, intentando establecer la regularidad de la tendencia y los ciclos; segundo, evaluar en qué medida las políticas monetarias y fiscales han contribuido de manera efectiva al crecimiento económico y, tercero, estimar la tasa natural de crecimiento de la economía boliviana, con el fin de valorar los impactos positivos o negativos que puede tener la política económica en un contexto que parece enfrentar fuertes restricciones, limitaciones e inflexibilidades. El trabajo toma el periodo 1952–2003, por el hecho de que la Revolución de 1952 cambió la estructura de Bolivia, y la realidad económica a partir de ese momento tiene una historia distinta a la sucedida con anterioridad.

A objeto de introducir a los lectores en la problemática del crecimiento en Bolivia, en los dos primeros puntos se hace una muy breve reseña del contexto político y las transformaciones económicas que caracterizaron el periodo de análisis. Por ello, los lectores bolivianos que conocen esta cronología pueden saltarlos. Seguidamente, realizamos una breve introducción teórica que intenta dar algunas pautas que guiaron nues-

tra reflexión. Al igual que los anteriores puntos, esperamos que nuestros colegas economistas para los cuales esta parte resulte innecesaria nos concedan alguna indulgencia, sobre la base de que este texto también está dirigido a nuestros estudiantes.

Los puntos 5 y 6 constituyen el corazón de la investigación, pues allí se identifica el comportamiento tendencial y cíclico de la economía en el periodo investigado. En los puntos 7, 8 y 9 se hace una aproximación a la efectividad de la política económica sobre el crecimiento de la economía para luego, en el punto 10, presentar una estimación de la tasa natural de crecimiento de la economía boliviana. Por último, se presentan las conclusiones más importantes que emergen de la investigación.

Consideramos que la historia económica de nuestro país da cuenta de una larga y oscura noche que nos ha sumido en la pobreza, de la misma forma que lo ha hecho con nuestros padres y los padres de nuestros padres, por lo que creemos que es necesario cambiar nuestra perspectiva de lectura de la realidad, pensando en el futuro que les debemos a nuestros hijos. Así entendido este trabajo, esperamos contribuir en alguna medida al objetivo de lograr este cambio de visión.

2. El contexto político y social

Para comprender los sucesos de abril de 1952, que transformaron la perspectiva política de Bolivia en la segunda mitad del siglo XX y marcaron la conciencia social que hasta el día hoy se mantiene como un referente con importantes implicaciones sobre el comportamiento económico, es necesario destacar algunos elementos que caracterizaron la primera mitad del siglo.

Aunque Bolivia asiste al nacimiento del siglo XX cercenada de su cordón umbilical con el comercio internacional por la pérdida de su salida al Océano Pacífico, ingresa al nuevo siglo con un importante cambio en su estructura política y económica. La Guerra Federal de fines del siglo XIX (1898-1899) marca el inicio de la fase liberal, que habría de regular la actividad social, política y económica hasta la crisis internacional de 1929.

El cambio hacia lo que posteriormente sería la fase nacionalista se inicia en los primeros años de la década de los años treinta, como resultado de la conjunción de dos importantes factores: la depresión internacional de 1929 y el inicio de la Guerra del Chaco.

en 1932. Ambos hechos originan el nacimiento de nuevos instrumentos, mediante los cuales la población interpela al Estado. De esta forma, se da el contexto para el surgimiento de una fuerte corriente nacionalista que asumirá el liderazgo del poder durante los gobiernos militares de Toro (1936-1937), Busch (1937-1939) y Villarroel (1943-1946).

La Revolución de 1952 se constituye en un hito para entender la historia moderna de Bolivia. Los cambios políticos, institucionales y económicos que siguieron a la revolución marcaron el camino por el que la sociedad boliviana transitó en las siguientes décadas (Dunkerley, 1987). La nacionalización de las minas trasladó el control económico a manos del Estado, mientras que la reforma agraria y el voto universal permitieron la ciudadanización de los campesinos y su incorporación al emergente mercado. El gobierno del Movimiento Nacionalista Revolucionario (MNR) se vio interrumpido en 1964 por medio de un golpe militar liderizado por René Barrientos, a partir de lo cual Bolivia habría de vivir una larga noche de dictaduras, con esporádicos momentos democráticos. El nacionalismo, con vaivenes entre el populismo y el reformismo, fue el marco ideológico de este período, en el que destaca la dictadura de Bánzer (1971–1978), por su larga duración, y la dictadura de García Meza (1980–1981), por su violencia, intolerancia y abuso atrabiliario e irresponsable del poder (Mesa, Gisbert y Mesa, 1997).

A inicios de la década del ochenta, los gobiernos militares estaban acabados. Así, en 1982 se recupera la democracia. El gobierno del Presidente Hernán Siles Suazo, apoyado por el Movimiento Nacionalista Revolucionario de Izquierda (MNRI), el Movimiento de la Izquierda Revolucionaria (MIR) y el Partido Comunista de Bolivia (PCB), es incapaz de controlar las presiones sociales y, al mismo tiempo, manejar la crisis económica, que terminarán reduciendo su mandato constitucional en un año.

En 1985 se consolida la democracia a través de lo que se denominó la "democracia pactada". El gobierno del MNR, con Víctor Paz Estenssoro como presidente, tendrá el apoyo de Acción Democrática Nacionalista (ADN) para cerrar el ciclo nacionalista e inaugurar la denominada fase liberal moderna, cuya necesidad histórica fue señalada precisamente por Paz Estenssoro (Sorman, 1987).

La Nueva Política Económica, aplicada a partir de 1985, que trataremos en el siguiente punto, inició un nuevo ciclo que posteriormente se vería profundizado durante la presidencia de Gonzalo Sánchez de Lozada (1993–1997). Fue durante este nuevo gobierno

del MNR que se realizaron las "Reformas de Segunda Generación", entre las cuales destacan como las más importantes la capitalización de las principales empresas estatales, la Participación Popular, la Reforma del Sistema de Pensiones y la Reforma Educativa, porque cambiaron la estructura económica y social del país. Cabe destacar que la Participación Popular, al otorgar recursos a los municipios a través de un sistema de coparticipación tributaria, implicó un proceso de descentralización gubernamental que dio calidad de ciudadanos a los habitantes de muchas regiones olvidadas (Galindo, 1998).

Después del gobierno de Bánzer-Quiroga, Sánchez de Lozada vuelve a ganar las elecciones y jura como Presidente Constitucional, en su segundo mandato, en agosto del 2002. Sánchez de Lozada ganó las elecciones con un pequeño margen de votos pero con elevado rechazo de importantes grupos de la población, que no podían perdonarle la capitalización de la empresa de hidrocarburos, uno de los símbolos del período nacionalista. Los pocos meses que duró su gobierno estuvieron caracterizados por consecutivos errores en el manejo de la crisis económica y de los conflictos sociales. En febrero de 2003 la ciudad sede de gobierno había sufrido una fuerte convulsión social con el saldo de varios muertos, y en octubre del mismo año la situación se había tornado insostenible. Así, después de varios días de enfrentamiento entre las fuerzas gubernamentales (Ejército y Policía) y grupos alzados en las ciudades de La Paz y El Alto, Sánchez de Lozada se ve forzado a renunciar y huir a Estados Unidos de Norteamérica. En octubre de 2003 asume la presidencia, por sucesión constitucional, el Vicepresidente, Carlos Mesa Gisbert. Al momento de escribir este trabajo, la situación política de Bolivia es muy delicada. El movimiento vencedor de octubre, una extraña mezcla entre posiciones indigenistas, nacionalistas e izquierdistas, si bien logró derrocar al gobierno, reavivando la visión estatista del pasado y buscando legitimación mediante una Asamblea Constituyente, no logra construir una hegemonía nacional. Fruto de esta incapacidad, en enero de 2005 se levanta una contraofensiva en Santa Cruz, que aunque también alcanza una victoria importante, logrando avanzar hacia las autonomías regionales, tampoco es capaz de lograr una supremacía en el contexto político nacional. Al presente, ambos frentes se encuentran en un proceso de acumulación de fuerzas destinada al siguiente enfrentamiento.

3. Las transformaciones económicas

Como destacamos anteriormente, la base conceptual de la matriz económica que emergería con la revolución de 1952 se remonta a los años de la posguerra del Chaco.

Allí nace la idea de que, para lograr el crecimiento, era necesario revertir la propiedad de los recursos naturales al Estado; de esa manera, la nacionalización de las minas y la consecuente creación de la Corporación Minera de Bolivia (COMIBOL), junto a la Corporación Boliviana de Fomento (CBF) y Yacimientos Petrolíferos Fiscales Bolivianos (YPFB), consolidaron la base material de un modelo que habría de guiar la actividad económica hasta la década del ochenta. A ello se sumó la posibilidad legal de fijar tasas de interés, tasas de cambio y salarios, atributos que conservaría el Estado hasta la implementación de la Nueva Política Económica, en 1985 (Rodríguez, 1999).

Más allá de dicha actitud nacionalizadora, del discurso contra lo que se vino a denominar "la rosca minero-feudal", no existía, ciertamente, una visión integral del funcionamiento económico; la Tesis de Ayopaya, documento exhibido como base del proceso revolucionario, no era otra cosa que una adecuación del programa económico desarrollado por Merwin Bohan. La Reforma Agraria, sancionada a poco más de un año de la revolución, completó el panorama de lo que fue el cambio más trascendental, por lo menos en el ámbito económico, que se dio desde la consolidación de la República.

Aunque contaba con una amplia base social de sustento, el modelo económico fuertemente estatista hizo aguas a los pocos años del triunfo de la revolución, y la profunda crisis que sobrevino parecía presagiar el derrumbe de toda la visión que había germinado al menos durante veinte años. Fue en ese escenario que, en 1956, se tuvo la necesidad de aplicar un programa de ajuste de características ortodoxas. A pesar de que algunos analistas consideran que con estas medidas el MNR habría traicionado la revolución, cabe destacar que el ajuste realizado durante la gestión del presidente Hernán Siles Zuazo salvó a la revolución de lo que habría sido su colapso. El ajuste, si bien tenía características ortodoxas en sus instrumentos y mantenía una fuerte presencia del Estado en las actividades productivas y en el control de las principales variables macroeconómicas, logró, después de dos años de su aplicación, una recuperación de la economía.

Pacheco (2001) puntualiza que los resultados de la estabilización fueron positivos, en la medida en que, al prohibirse a las instituciones públicas contraer préstamos del Banco Central, se redujo considerablemente la tasa de aumento de la oferta monetaria y, en consecuencia, también disminuyó el déficit fiscal, desinflándose notoriamente las presiones inflacionarias. Como también anota Pacheco, la elevación de los precios del estaño es un elemento importante a considerarse cuando se analiza el crecimiento en

los años que siguieron a 1958. Asimismo, no deberia dejarse de anotar que más de un 80 por ciento del déficit del sector público era cubierto con la ayuda norteamericana.

El fracaso del modelo económico basado en la sustitución de importaciones y la pérdida de la base social del MNR condujeron, según Zavaleta (1992), a la irrupción del régimen despótico de René Barrientos, que marcaría el inicio de un proceso de desorden económico y la reactivación de actitudes nacionalistas como la nacionalización de la Gulf Oil, que culminaron con la experiencia populista de 1970 y la crisis estatal de 1971.

Durante el periodo que va de 1971 a 1977, correspondiente a la dictadura de Hugo Bánzer, la economía mostró un comportamiento positivo. Se recuperó el crecimiento, favorecido, fundamentalmente, por un elevado endeudamiento externo y, en cierta medida, por los precios de los productos de exportación. En ese marco de crédito externo barato y un comportamiento creciente de los precios, especialmente del estaño, era posible sostener la protección a la industria nacional; sin embargo, cabe anotar que el sector industrial no respondió de la manera que se esperaba. En lo referente al sector petrolero, como lo destacan Mesa y otros (1997), Bolivia alcanzó su máxima capacidad exportadora de líquidos en 1975, la que, a partir de ese año, comenzó a disminuir hasta cubrir difícilmente el mercado interno, junto a un proceso en el que YPFB entraba en una preocupante espiral de pérdidas. La situación mejoró ostensiblemente con los importantes descubrimientos de reservas de gas natural y la conclusión del gasoducto a la Argentina. La importancia de las exportaciones de gas se reflejó en que éstas superaban el 50 por ciento del total de las exportaciones en los primeros años de la década del ochenta.

El periodo que va desde la renuncia de Bánzer, en 1978, hasta la recuperación efectiva de la democracia, en 1982, es de elevada convulsión política y desangramiento de la economía, lo que haría crisis durante el gobierno de la Unidad Democrática y Popular. Entre 1982 y 1985 la economía se caracterizó por un agudo proceso inflacionario que llegó a superar el 20,000 por ciento a doce meses. Los factores disparadores del proceso inflacionario fueron el abultado déficit del sector público y la pesada carga del servicio de la deuda externa, en un contexto de disminución del crecimiento del lado real de la economía (Morales, 1987). El gobierno de entonces intentó parar la crisis mediante varias medidas, entre ellas la moratoria de la deuda externa; sin embargo, ninguno de estos esfuerzos logró un resultado positivo. Ante la inminencia de una debacle total del sistema económico, se adelantaron las elecciones y Víctor Paz Estenssoro fue elegido por el Congreso como Presidente Constitucional de la República.

En agosto de 1985 se promulga el Decreto Supremo 21060, que haría cambiar el modelo económico estatista. Se estableció una política de fuerte control fiscal, se prohibió la contratación de deuda por parte de las entidades del Estado sin autorización previa, se eliminó la prohibición de operaciones con moneda extranjera y se liberalizaron los precios y las tasas de interés. Asimismo, se liberalizó el comercio exterior, se congelaron los salarios en el sector público y se dejó al mercado la fijación de los salarios en el sector privado. El plan de ajuste fue complementado con una reforma tributaria y la creación de un Fondo para apoyar a los grupos sociales más vulnerables. Cabe destacar que gran parte del financiamiento del programa de ajuste recayó en el sector de hidrocarburos, en tanto que la empresa estatal de petróleo (YPFB) transferia, en calidad de regalías e impuestos, el 65 por ciento de sus ingresos brutos al Tesoro General de la Nación.

La Nueva Política Económica, mediante una rígida disciplina fiscal y un riguroso control de la oferta de dinero, logró contener el proceso inflacionario. Las reservas internacionales mejoraron de manera significativa y el tipo de cambio se mantuvo dentro de límites manejables. En el sector real, la fase recesiva que caracterizó el periodo 1978-1986 fue revertida, y la tasa de desempleo se redujo en siete puntos porcentuales. En el contexto del comercio exterior, las exportaciones, que durante la crisis se habían reducido a niveles mínimos y mostraban signos de crecimiento negativos, fueron uno de los problemas más difíciles que tuvo que enfrentar el gobierno, sobre todo a causa de la dramática caída del precio del estaño en octubre de 1985 y la caída de los precios de exportación de gas. Fue recién a partir de 1987 que se pudo revertir esta tendencia, pasando el país a mostrar tasas de crecimiento positivas en las exportaciones. Respecto al flujo de capitales, también se logró pasar de un comportamiento negativo a otro positivo en 1987 (Antezana (1988) y Cariaga (1996))

Durante la gestión de Gonzalo Sánchez de Lozada (1993-1997) se realizaron las denominadas "Reformas de Segunda Generación", entre las que destacan la capitalización de las empresas del Estado, la Participación Popular y la Reforma del Sistema de Pensiones. La primera de ellas tuvo su causa principal en el hecho de que las principales empresas estatales no solamente mostraban un virtual estancamiento sino una profunda crisis. La Empresa Nacional de Ferrocarriles había acumulado un pasivo de 200 millones de dólares norteamericanos y presentaba pérdidas cercanas a los 20 millones de dólares anuales, el Lloyd Aéreo Boliviano tenía pérdidas anuales superiores a los 6 millones de dólares, Yacimientos Petrolíferos Fiscales Bolivianos, en 60 años de existen-

cia, apenas había alcanzado a explorar un 13 por ciento del territorio potencialmente hidrocarburífero del país y, de manera similar, la Empresa Nacional de Electricidad apenas había logrado aprovechar el 1 4 por ciento del potencial hidroeléctrico Finalmente, la Empresa Nacional de Telecomunicaciones era incapaz de ampliar su cobertura En este contexto de profunda crisis, la capitalización tuvo sin duda un efecto beneficioso, pues estas cinco empresas estatales lograron atraer una inversión extranjera de 1,670 millones de dólares americanos

Por otra parte, la Participación Popular fue un mecanismo de cambio de la estructura del Estado que abrió un proceso de descentralización, distribuyendo el 20 por ciento de coparticipación tributaria a los municipios Finalmente, la Reforma del Sistema de Pensiones eliminó el anterior sistema de reparto, que se encontraba en quiebra, sustituyéndolo por un sistema de capitalización individual A la fecha, sin embargo, el costo del cambio de sistema es una pesada carga para las finanzas públicas, debido a que no contó con financiamiento externo

La gestión económica entre los años 1993 y 1997 mostró, evidentemente, una importante mejora de la economía nacional Las reservas internacionales netas superaron los 1,000 millones de dólares, garantizando una estabilidad que se reflejó en una tasa de inflación de un dígito, al tiempo que la tasa de crecimiento alcanzó el 5 por ciento (Mercado, 1999) Pero en 1999 la economía boliviana se derrumba por efecto de las crisis internacionales, especialmente la ocurrida en Brasil, así como por un manejo poco adecuado de la política económica Al presente la situación es extremadamente delicada, especialmente por el elevado déficit fiscal, en un contexto de retorno a las políticas estatistas de la década de los setenta La inseguridad jurídica ha generado una brusca caída de la inversión extranjera y, a pesar de que se descubrieron importantes reservas de gas natural, existen pocas posibilidades de atraer capitales del exterior para generar desarrollo

4. El crecimiento y los ciclos económicos

La teoría moderna de la dinámica económica se inicia con el modelo neoclásico de Robert Solow (1956), el mismo que nos conduce a la hipótesis de una situación estacionaria que solamente puede modificarse mediante un cambio exógeno de la tecnología Treinta años después, Romer (1986) presenta el desarrollo de un modelo donde es posible aceptar un crecimiento a largo plazo por razones endógenas La discusión y el tra-

tamiento de los modelos endógenos, así como la hipótesis de la convergencia o las trampas de pobreza, entre otros, han generado una amplia literatura sobre los determinantes y condicionamientos para el crecimiento, aunque sus aplicaciones para el caso boliviano han sido más bien escasas (Mercado, 1998).

Por su parte, el tratamiento de los ciclos económicos se inicia con la obra pionera de Kondratiev, en tanto ésta se concentra en el análisis de los ciclos de ondas largas, para después integrar el tratamiento de lo que se vino a denominar *Businness Cycle Theory*, donde aparecen claramente separadas dos visiones del fenómeno: aquéllas que postulan la existencia de un *shock* exógeno que dispararía el proceso cíclico y aquéllas que atribuyen la puesta en marcha del ciclo a la misma lógica del comportamiento económico.

La tradición keynesiana, cuyo paradigma se constituyó en la base del análisis económico hasta muy entrada la década del setenta, explicó los ciclos con base en perturbaciones reales asociadas a la volatilidad de las decisiones de inversión; entonces surgió la crítica monetarista, que planteaba la causalidad monetaria de los ciclos económicos, según la cual una perturbación nominal, en un contexto de rigideces de precios o salarios, podía generar cambios en el sector real. Aunque el enfrentamiento entre keynesianos y monetaristas logró un desarrollo importante de los modelos analíticos hasta inicios de la década del los noventa, su estructura conceptual fue poco sólida frente a la arremetida de la Nueva Macroeconomía Clásica. Los trabajos de Lucas (1977) y otros transitaron desde el tratamiento de ciclos de equilibrio hasta los modelos del ciclo real.

El objetivo de este trabajo no es discutir las teorías del crecimiento y de los ciclos económicos, así como tampoco lo es identificar la causalidad de los fenómenos en el caso boliviano. Su objetivo es mucho más modesto: se trata solamente de indagar, a través de instrumentos estadísticos y econométricos, el comportamiento de la economía boliviana, por lo que el muy breve resumen contenido en los anteriores párrafos es más que suficiente para contextualizar nuestro trabajo.

En lo referente a la estimación del comportamiento de una serie, en el caso específico del producto, hasta antes de los trabajos de Nelson y Plosser (1982), la tendencia en el crecimiento era estimada con base en un modelo determinista, donde las variaciones cíclicas resultaban del residuo entre los datos observados y los datos estimados.

siendo que las perturbaciones contenidas en la variable que media el ciclo no afectaban la tendencia del crecimiento. Nelson y Plosser encontraron de manera empírica que las perturbaciones cíclicas podían afectar a la tendencia, por lo que sugirieron un modelo estocástico que no retorna a la tendencia o, dicho de otra manera, que no permite separar arbitrariamente las variables que afectan al ciclo y la tendencia.

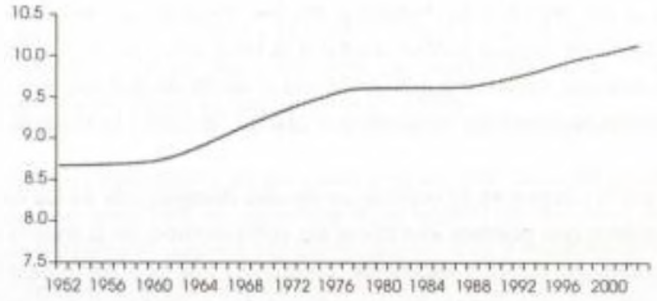
Por ello se vio la necesidad de realizar un estudio desagregado de los componentes de la serie, el mismo que permita identificar los componentes de la misma en su comportamiento tendencial, cíclico y estacional, de manera que se puedan descubrir las covarianzas entre ellos, como trabajo previo al ajuste de un modelo que permita explicar la senda tendencial del crecimiento. Los trabajos más importantes en este campo fueron realizados por Hodrick y Prescott (1980) y Kydland y Prescott (1990). Hoy el Filtro de Hodrick y Prescott es uno de los más usuales en el tratamiento de las series.

Los trabajos de Finn E. Kydland y Edward C. Prescott, ganadores del Premio Nobel de Economía de 2004, respecto al comportamiento tendencial y la efectividad de las políticas activistas sobre el desempeño de la economía, han reabierto el debate de la economía política en otro escenario, entre ellos merecen subrayarse *Time to Build and Aggregate Fluctuations* (1982) y *Rules Rather Than Discretion: The Inconsistency of Optimal Plans* (1977). Por último, cabe destacar que tanto el desarrollo teórico alcanzado al presente como los diversos trabajos empíricos realizados dan cuenta de un importante acercamiento que permite integrar la teoría del crecimiento con la teoría de los ciclos.

5. El crecimiento tendencial

El comportamiento de la economía boliviana durante los últimos cincuenta años muestra una tasa de crecimiento que podría calificarse de primitiva, es decir que el producto aumenta casi de manera exclusiva por el crecimiento poblacional, sin mostrar aumentos en la productividad. La tasa de crecimiento tendencial, ajustada por el filtro de Hodrick y Prescott, fue del 2.8 por ciento, mientras que la población creció a un 2.4 por ciento. Este resultado es coherente con la estimación de la tasa de crecimiento de largo plazo que se obtiene mediante el Modelo de Equilibrio General del Instituto de Investigaciones Socio-Económicas de la Universidad Católica Boliviana, el mismo que alcanza a un 2.5 por ciento (Mercado *et al.*, 2003). De allí se establece que la tasa de crecimiento tendencial en Bolivia estaría entre 2.5 y 2.8 por ciento.

Gráfico 1: Comportamiento tendencial del PIB (en logaritmos)

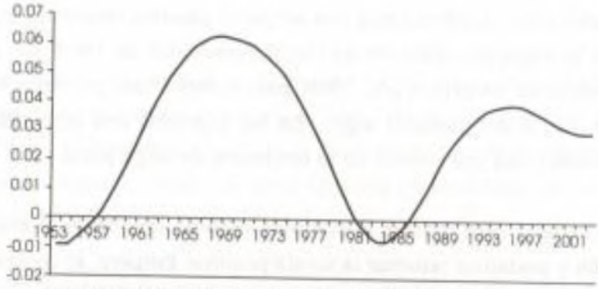


Fuente: Elaboración propia con base en datos en UDAPE

Como se puede observar en el Gráfico 1, este comportamiento, ajustado respecto a una ecuación de tendencia, muestra dos ciclos de largo plazo bien definidos y un tercero que puede ser ajustado con los datos de los últimos años. El primer ciclo tiene una longitud de 28 años, de 1952 a 1980, siendo su fase recesiva de solamente cuatro años, para pasar a una larga fase expansiva de 24 años, con una amplitud negativa del 13.7 por ciento respecto al valor de tendencia. El segundo ciclo traslapado es el comprendido entre 1956 y 1985, con una fase expansiva de 24 años y otra recesiva que se inicia en 1980 y termina en 1985; la amplitud de este ciclo representa un 23 por ciento por encima de la tendencia. Por último, ajustando los datos de 1999 al 2003, es posible observar un tercer ciclo que, iniciándose en 1980, tendría una longitud de 23 años y una amplitud de 11.3 por ciento negativo respecto al valor de tendencia.

La dinámica de la tendencia, como se observa en el Gráfico 2, refleja de mejor manera los dos ciclos de largo plazo asociados a las políticas económicas: el primero, a una política con fuerte presencia del Estado en la economía, y el segundo, a una mayor presencia del mercado. Allí se observa un primer ciclo, con una longitud de 31 años (1952-1983), y un segundo, que va desde 1983 al 2003. En el primer ciclo la fase expansiva dinámica dura 16 años y la fase recesiva 15; en el segundo ciclo, la fase dinámica expansiva dura 12 años y la fase recesiva 8. Comparando ambos ciclos de largo plazo, en términos de la relación entre la fase expansiva y la fase recesiva, se puede concluir que el segundo ciclo ha sido más favorable en términos de bienestar de la población. Si bien es cierto que la amplitud del primer ciclo es mucho más alta que la amplitud del segundo, su fase recesiva es también mucho más profunda; así, comparando ambos ciclos respecto a la relación amplitud positiva y profundidad de caída, tenemos que el segundo ciclo fue más favorable.

Gráfico 2: Tasa de crecimiento de la tendencia (en logaritmos)

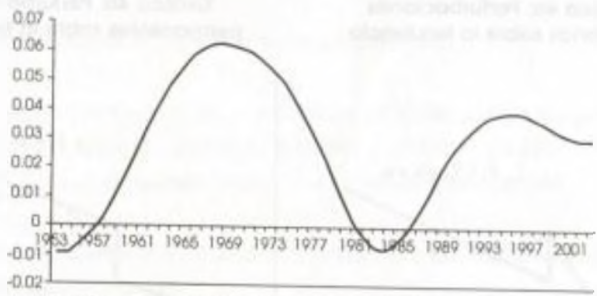


Fuente: Elaboración propia con base en datos de UDAPE

6. El comportamiento cíclico

Los primeros años que siguieron a la Revolución de 1952 muestran un comportamiento fuertemente volátil, como puede observarse en el Gráfico 3. Las variaciones cíclicas respecto a la tendencia son altas hasta tocar un piso en 1958, año a partir del cual se da una fase de crecimiento que alcanza su mayor amplitud el año 1969, para cerrar con una caída hasta el año 1972. A ello le sigue un nuevo ciclo, que alcanzará la mayor amplitud positiva respecto a la tendencia de toda la serie, en el año 1979, para posteriormente caer también a lo más profundo, el año 1987.

Gráfico 3: Los ciclos económicos (en logaritmos)



Fuente: Elaboración propia con base en datos de UDAPE

Sin considerar los primeros años, que, como señalamos, reflejan un comportamiento muy volátil, podemos asociar el primer ciclo al impulso de las transformaciones de la Revolución de 1952 y el segundo al periodo de elevado endeudamiento externo que,

como no podía ser de otra manera, termina en un fondo de pozo. Partiendo de allí se impulsa un nuevo ciclo, que alcanzará una amplitud positiva respecto a la tendencia superior a la que se logró con base en las transformaciones de 1952, sin embargo, esta fase de crecimiento se revierte el año 1999, para volver a caer por debajo de la tendencia a partir de inicios del presente siglo. En los primeros tres años del siglo XXI, en efecto, la economía está por debajo de la tendencia de largo plazo.

Es posible esperar que, gracias al contexto externo favorable, el año 2004 sea un año de inflexión y podamos retomar la senda positiva. Empero, el contexto externo no es suficiente; es necesario mantener una economía sana, es decir, un manejo prudente de la política monetaria y una disciplina fiscal que preserve la estabilidad.

7. Relevancia de la política económica

A objeto de evaluar la efectividad de la política económica, es necesario establecer si el componente dominante de la serie es la tendencia o el ciclo. En el caso de que el componente dominante sea el tendencial, entonces podemos considerar que la política económica tendrá muy poco efecto sobre el crecimiento y, más bien, debería ponerse mayor énfasis en las políticas institucionales o en las reglas, antes que en la discrecionalidad de la política económica; por el contrario, si es el componente cíclico el dominante, la política económica tendrá mayor relevancia.

Gráfico 4a: Perturbaciones transitorias sobre la tendencia

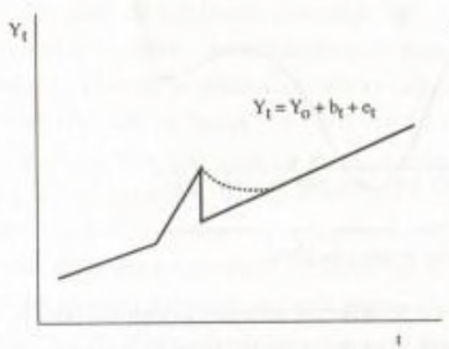
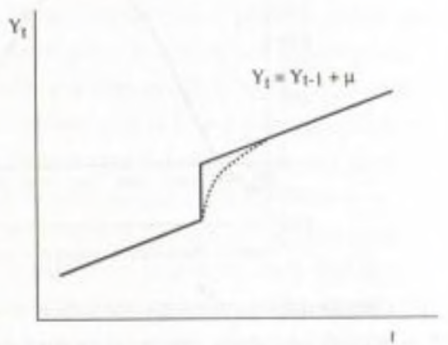


Gráfico 4b: Perturbaciones permanentes sobre la tendencia



Una posibilidad de modelar el componente tendencial es de manera determinística, tal como se observa en el Gráfico 4a, donde el producto sigue una tendencia constante y las perturbaciones solamente generan cambios transitorios, pero que siempre retornan a la tendencia. Alternativamente, se puede modelizar el producto haciéndolo estacionario en primeras diferencias, de manera que las perturbaciones tengan efectos transitorios sobre las primeras diferencias del producto, pero efectos permanentes sobre su nivel, como se observa en el Gráfico 4b (Argandoña, Gamez y Mochón, 1997)

Tomando los datos del crecimiento del PIB de Bolivia de 1952 al 2003 y después de ajustar la tendencia por el filtro de Hodrick y Prescott, se probaron ambas alternativas. El mejor ajuste resultó ser aquél que muestra una tendencia determinista (Grafico 4a), es decir que el producto es estacionario respecto a la tendencia. La perturbación está serialmente correlacionada, por lo que fue necesario incorporar cuatro rezagos. Esto muestra que las perturbaciones, aunque presentan persistencia, son estacionarias respecto a la tendencia. El modelo en diferencias tiene la siguiente forma

$$(1) \quad \Delta Y_t = \Gamma_0 + \sum_{i=1}^{n} \alpha_i \Delta \varepsilon_{t-i} + e_t$$

donde: Γ_0 representa el nuevo valor inicial de la serie Hodrick-Prescott diferenciada; $\Delta\varepsilon_{t-i}$: diferencias del error estadístico del filtro de Hodrick-Prescott; e_t: error estocástico

Los resultados de la regresión son los siguientes:

$$(1a) \quad \Delta Y_t = -3.074 + 3.231\Delta\varepsilon_{t-1} - 4.028\Delta\varepsilon_{t-2} + 2.307\Delta\varepsilon_{t-3} - 0.521\Delta\varepsilon_{t-4} + e_t$$

(-828.118) (25.834) (-11.369) (6.532) (-4.211)

R^2 ajustado = 0.9 Log verosimilitud = 327.748

El modelo es estable y no presenta problemas de autocorrelación, así como tampoco de heteroscedasticidad

Con base en lo tratado, cabría anotar que, dadas las características de comportamiento de la economía boliviana en el último medio siglo, se predice que la política económica es irrelevante para influir sobre el nivel del producto de largo plazo

Cuadro 2a
Comovimiento del ciclo del PIB y de la inversión pública

Desviación estándar	Desviación relativa	Autocorrelación	Coeficiente de correlación cruzada	Contemporaneidad
0.279	6.452	0.585	0.740	Adelantada en 1

Fuente: Elaboración propia con base en datos de UDAPE

Cuadro 2b
Comovimiento del ciclo del PIB y del gasto corriente

Desviación estándar	Desviación relativa	Autocorrelación	Coeficiente de correlación cruzada	Contemporaneidad
0.119	2.740	0.401	0.462	Adelantada en 1

Fuente: Elaboración propia con base en datos de UDAPE

Cabe hacer notar que este resultado es un promedio de la serie 1970-2003, fuertemente afectado por las primeras dos décadas, ya que, como se puede observar en el Gráfico 6a, la década del noventa presentaría una relación contracíclica, es decir, caracterizada por una relación inversamente proporcional entre inversión pública y crecimiento del producto (a mayor inversión pública, menor crecimiento del producto, y viceversa).

Es posible ensayar una explicación de este fenómeno: durante las décadas del setenta y del ochenta, la participación del Estado en la producción era muy importante, por lo cual, independientemente de su muy baja eficiencia, un incremento de la inversión se traducía en mayor crecimiento del producto; en cambio, en la década del noventa, cuando el sector privado pasa a ser el principal generador de bienes y servicios, la inversión pública, en lugar de generar externalidades positivas sobre la producción, como lo señalan algunos economistas, presentaría un *crowding out* que reduciría las posibilidades de crecimiento de la actividad privada generadora de riqueza.

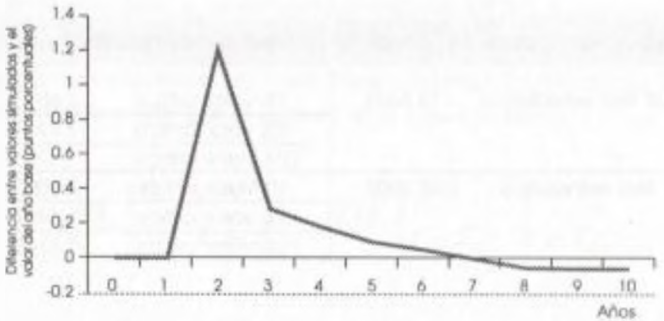
Para el gasto público corriente, el valor del coeficiente de correlación cruzada nos muestra que el gasto es débilmente procíclico respecto al producto, es decir que un au-

mento del gasto se traduciría en un incremento (menor, proporcionalmente) del producto en el siguiente periodo.

Lo que corresponde ahora es preguntarnos en qué medida un aumento de la inversión pública y del gasto público corriente elevan el crecimiento del producto, así como también cuál es la persistencia de este incremento. Para ello, utilizando el Modelo de Equilibrio General desarrollado por el Instituto de Investigaciones Socio-Económicas de la Universidad Católica, partimos de la línea de base del modelo e introducimos la simulación de un incremento del 10 por ciento del gasto público total (inversión más gasto corriente) en el año 1. Realizada esta perturbación en el año 1, los siguientes años el gasto público total vuelve a su tendencia histórica de crecimiento del 2.5 por ciento anual, aunque desde un nivel más alto.

Como puede observarse en el Gráfico 7, el incremento genera, el primer año, un crecimiento de un 1.2 puntos porcentuales por encima del crecimiento del escenario base, sin embargo, al siguiente año el incremento se reduce bruscamente a solamente 0.3 puntos porcentuales. A partir del séptimo año, desde el momento en que se dio el incremento original del 10 por ciento, el producto cae por debajo de la tendencia del escenario base. Cabe destacar que este incremento sería aproximadamente equivalente al 1.7 por ciento anual del déficit del sector público como porcentaje del PIB. En suma, una política fiscal expansiva no sería efectiva para elevar el crecimiento del producto en el mediano y largo plazo, y aunque en el muy corto plazo sí tendría un efecto positivo, posteriormente se revertiría, mostrando un efecto negativo sobre el crecimiento.

Gráfico 7: Gasto público y crecimiento del PIB



Fuente: Elaboración propia con base en el modelo de Equilibrio General del IISEC

10. La tasa natural de crecimiento

En esta parte del documento se realiza un ejercicio para identificar la Tasa Natural de Crecimiento de la economía boliviana en el periodo 1988-2003. A continuación se presenta brevemente una descripción de la metodología utilizada y posteriormente se desarrollan los resultados encontrados.

Metodología

Para realizar la estimación de la tasa natural de crecimiento de la economía boliviana se realizó un análisis de series de tiempo a través de diversas pruebas econométricas sugeridas por Dickey-Fuller (1979,1981), Phillips y Perron (1988) y Perron (1989) respectivamente[1]. Por otro lado, este documento sigue la metodología propuesta por Chumacero y Quiroz (1996), para la serie trimestral del PIB de los años 1988 a 2003, porque permite obtener resultados confiables y robustos.

Cuadro 3
Test de raíz unitaria

Serie en niveles	LN PIB	Test de valores críticos	
ADF Test estadístico	-1.9664	1% Valor crítico	-3.5461
		5% Valor crítico	-2.9117
		10% Valor crítico	-2.5936
PP Test estadístico	-1.6284	1% Valor crítico	-3.5362
		5% Valor crítico	-2.9077
		10% Valor crítico	-2.5911
Serie en diferencias	**LN PIB**	**Test de valores críticos**	
ADF Test estadístico	-13.5475	1% Valor crítico	-2.6013
		5% Valor crítico	-1.9459
		10% Valor crítico	-1.6186
PP Test estadístico	-28.3908	1% Valor crítico	-2.6000
		5% Valor crítico	-1.9457
		10% Valor crítico	-1.6185

1 De ahora en adelante se denominarán como Dickey-Fuller (DF o ADF), Phillips-Perron (PP) y Perron, respectivamente.

En primer lugar se analizó la estacionariedad de las series y se procedió a examinar la presencia de raiz unitaria, a través de los ya conocidos tests de Dickey Fuller (DF) y Dickey Fuller Ampliado (ADF). Para corroborar los resultados de dichos tests se contrastó con la prueba de raiz unitaria propuesta por Phillips y Perron. En el cuadro siguiente se presenta un resumen de todos los tests de raiz unitaria.

Para hacer el análisis de raiz unitaria a través de la prueba DF y ADF se escogió la cantidad de rezagos óptimos necesarios para que los residuos cumplan con las propiedades estadisticas minimas deseadas. El test ADF indica que la serie del Logaritmo del PIB presenta un proceso de caminata aleatoria; por lo tanto, no se pudo rechazar la hipótesis nula propuesta. De igual manera, al realizar el test de Phillips y Perron (con 4 rezagos de truncación) se confirma la existencia de raiz unitaria en la serie. Cuando se aplican los tests con la serie modificada en diferencias, los resultados muestran que la presencia de raiz unitaria ha desaparecido.

Los resultados estadisticos encontrados en los test de raiz unitaria pueden mostrar un sesgo hacia el no rechazo de la hipótesis nula de presencia de raiz unitaria, debido a la posibilidad de encontrar quiebres estructurales dentro de las series. En ese sentido, Perron propuso una metodología para observar si la serie analizada presenta quiebres estructurales; para la aplicación de este test se debe conocer *ex ante* el periodo donde se produce el quiebre estructural. En ese sentido, se procede a estimar la prueba de quiebre estructural propuesta por Perron realizando la siguiente estimación:

$$(2) \quad y_t = \alpha_0 + \alpha_1 D_t + \beta_0 T_t + \beta_1 DT_t + \rho y_{t-1} + \sum_{j=1}^{L} \delta_j \Delta y_{t-1} + \varepsilon_t$$

Donde, en nuestro caso, y_t es el logaritmo (natural) del PIB, Δ es el operador de primera diferencia, T_t es un componente determinístico de tendencia y L es el número de rezagos necesarios para que e_t sea ruido blanco; además, se incorporan las variables ficticias *(dummies)* Dt y DTt, que se definen de la siguiente forma:

$$D_t \begin{cases} 0 & t < T_0 \\ 1 & t \geq T_0 \end{cases} \qquad DT_t \begin{cases} 0 & t < T_0 \\ t - T_0 & t \geq T_0 \end{cases}$$

La especificación anterior es capaz de dar cuenta de quiebres estructurales en niveles, quiebres en tendencia o una combinación de ambos.

Una característica importante en el test de quiebre estructural de Perron es que el econometrista debe conocer anticipadamente el periodo de quiebre. Esto nos lleva a un serio problema, ya que existe la posibilidad de incurrir en errores estadísticos al rechazar/aceptar una hipótesis nula, siendo que ésta es verdadera. El estudio de Perron fue cuestionado por un conjunto de trabajos que sugieren que no es apropiado especificar la fecha de quiebre como conocida, sino elegir aquélla que provea mayor evidencia en contra de la hipótesis de raíz unitaria. Zivot y Andrews (1992) propusieron una manera diferente de construir el *test*, considerando la posible existencia de quiebres en niveles y/o tendencia. En particular, estos autores extendieron la prueba ADF tradicional, incorporando *dummies* secuenciales para tomar en cuenta los posibles quiebres, pero de igual manera este método está limitado a la identificación de un solo quiebre estructural (Ayala y Soto, 2002).

De esta manera, se procedió a simular el periodo de quiebre de manera endógena al modelo, para lo cual se realizaron iteraciones con las variables ficticias (tanto de D_t y DT_t), de manera que se pueda eliminar el componente de error en la estimación[2].

Resultados de las estimaciones

Antes de realizar el análisis de los resultados econométricos, observemos con detenimiento lo que nos muestra el gráfico de la evolución del PIB en Bolivia. En el año 1999 se observa un *shock* negativo que, según los resultados mostrados a continuación, sugieren la presencia de *shocks* transitorios de larga duración. Además, el análisis gráfico sugiere que no existió un cambio en la tendencia de la serie, sino sólo una disminución en el nivel de la variable que tiende a ajustarse lentamente hacia la tendencia.

2 En el Gráfico 1 del anexo se presentan las iteraciones del test secuencial de Perron para raíz unitaria con quiebre en nivel.

Gráfico 8: Comportamiento del producto en logaritmos

Fuente: Elaboración propia con base en datos de UDAPE

Relaciones de largo plazo

Para encontrar la relación de largo plazo se siguió la metodología propuesta por Perron y se obtuvo la siguiente ecuación de comportamiento

$$(3) \quad PIB = \alpha_0 + \beta T_t + \alpha_1 DL99 + \varepsilon_t$$

Donde:[3]

PIB : Producto Interno Bruto de Bolivia
α_0 : Componente determinístico en miles de millones de bolivianos de 1990
α_1 : Coeficiente en tasa de crecimiento trimestral
β : Coeficiente en tasa de crecimiento trimestral
DL99 : Variable ficticia de nivel correspondiente al primer trimestre del año 1999
T_t : Componente determinístico tendencial
ε_t : Errores del modelo.

$$(3a) \quad PIB = 3.499 + 1.0102T_t - 1.0597DL99_t + \varepsilon_t$$
$$(1538.324) \quad (-2.573) \quad (17.958)$$
$$R^2 \text{ ajustado} = 0.9216 \qquad \text{Log verosimilitud} = 102.7108$$

3 Los valores expresados por cada coeficiente fueron previamente transformados de la ecuación de largo plazo obtenida (Ver anexo I)

Luego de especificada la ecuación de largo plazo, en la ecuación 3a se presentan los resultados econométricos obtenidos para la identificación de la tasa natural de crecimiento de la economía boliviana. Esta ecuación representa la relación de largo plazo encontrada para el periodo 1988-2003. Dadas las características del crecimiento económico, se observa que existió un *shock* negativo que afectó severamente al crecimiento económico de Bolivia en el primer trimestre del año 1999[4]. Este efecto negativo se explica por la caída de los flujos de capital hacia el país, así como la coyuntura económica internacional, especialmente de los países vecinos, que hizo que el crecimiento del PIB a partir del año 1999 disminuyera considerablemente respecto al obtenido un año antes[5]. El *shock* del año 1999 afectó negativamente al PIB en 4.24 puntos porcentuales, provocando un muy modesto 0.43 por ciento de crecimiento, comparado con la tasa de crecimiento del año 1998.

El punto más importante en este análisis es el valor del coeficiente de la tendencia, que en definitiva nos muestra la tasa de crecimiento natural de la economía boliviana, la misma que alcanza a 4.04 por ciento anual[6]. Es importante destacar que esta tasa corresponde al periodo 1998-2003, por lo que la fuerte diferencia existente respecto a la tasa de crecimiento de largo plazo obtenida en la primera parte del trabajo se explica fundamentalmente por el impacto positivo que tuvo la entrada de capitales de inversión extranjera directa, asociado al proceso de capitalización, y las externalidades positivas que se crearon en la economía gracias a la estabilización iniciada a mediados de la década del ochenta.

Representación de corto plazo final

El objetivo de encontrar una relación de corto plazo es poder interpretar la duración del *shock* y entender la actual tasa de crecimiento de la economía boliviana. En ese sentido, la dinámica de corto plazo viene dada por:

$$(4) \qquad \Delta y_t = \alpha_1 + \sum \beta_i \Delta y_{t-1} + \gamma \varepsilon_{t-1} + \eta_t$$

4 Ayala y Solá (2002) encuentran un quiebre estructural en el crecimiento del PIB de Bolivia en el primer trimestre del año 1999.

5 Además, se debe añadir que en 1999 todavía persisten los efectos rezagados de la crisis asiática, el efecto vodka (Rusia), el efecto samba (Brasil) y posteriormente el comienzo del efecto tango, en la Argentina.

6 La tasa natural de crecimiento del PIB (g) se obtiene a partir del coeficiente de la ecuación de largo plazo. En particular, la tasa natural de crecimiento anual se calcula al transformar el coeficiente en valores no logarítmicos de periodicidad trimestral.

donde ε_t es el residuo de la ecuación de largo plazo estimada en (3) y [redacted] son innovaciones.

En la ecuación 4a observamos los resultados obtenidos a través de un modelo de corrección de error:

$$(4a)\quad \Delta y_t = \underset{(3.4344)}{0.031} - \underset{(-4.4816)}{0.633}\Delta y_{t-1} - \underset{(-3.0457)}{0.430}\Delta y_{t-2} - \underset{(-3.5120)}{0.407}\Delta y_{t-3} - \underset{(-2.8441)}{0.185}\Delta y_{t-8} - \underset{(-1.4994)}{0.082}\Delta y_{t-9}$$
$$- \underset{(-3.5482)}{0.051}D1 + \underset{(3.1049)}{0.049}D2 - \underset{(-3.3157)}{0.016}DL99 - \underset{(-2.0500)}{0.236}\varepsilon_{t-1} + \eta_t$$

R^2 ajustado = 0.9664 Log verosimilitud = 154.4884

La ecuación 4a muestra que el ajuste de corto plazo corresponde a 0.78 puntos porcentuales de la tasa de crecimiento del PIB cada trimestre, lo que nos estaría mostrando que en el plazo de 5 trimestres se podría absorber la totalidad de los *shocks*[7]. Entonces, según estos resultados, la tasa de crecimiento de la economía boliviana debería haber retornado a los niveles de crecimiento previos al *shock*. Esto en la práctica no ocurrió. La explicación del comportamiento de la tasa de crecimiento del PIB después de 1999 radica en que, al observar los resultados de los rezagos de la variable dependiente en la ecuación de corto plazo, encontramos una fuerte persistencia en el *shock*, indicando que el retorno hacia el crecimiento natural es más lento[8]. En ese sentido, al analizar el efecto del *shock* en la ecuación de corto plazo, vemos que hasta el año 2003 el *shock* todavía afecta negativamente el crecimiento económico de Bolivia. Por lo tanto, concluimos que el *shock* transitorio negativo sufrido por la economía boliviana es persistente.

Finalmente, al contrastar estos resultados con el PIB tendencial explicado anteriormente, vemos que en los próximos 2 a 3 años Bolivia podría retornar a su tasa de crecimiento natural, siempre bajo el supuesto de la no existencia de *shocks* (positivos o negativos) en la economía.

7 El valor efectivo de ajuste de corto plazo representado por el coeficiente 1 del Modelo de Corrección de Error se obtiene al transformar los coeficientes de la función translogarítmica en las tasas de crecimiento.

8 En Leitón (2000) se identifica que la persistencia de shocks (transitorios) correspondientes a una desviación estándar de los términos de intercambio sobre el PIB tienen una duración de dos años en promedio.

11. Conclusiones

La historia económica de Bolivia en el siglo XX presenta dos puntos de quiebre. El primero es la Revolución Nacional de 1952, que no solamente cambia la estructura económica del país, sino que transforma la forma de entender el funcionamiento de la economía en la conciencia de las grandes mayorías de la población. No solamente fueron las transformaciones que se llevaron a cabo después de los hechos de abril de 1952, sino el carácter que tuvieron las reformas y la forma en que fueron internalizadas por la sociedad las que construyeron un *desideratum* que hasta el día de hoy condiciona nuestra lectura de los problemas económicos.

El segundo punto de quiebre tiene dos momentos o, si se prefiere, un período que va de 1985 a 1997. En agosto de 1985, con la promulgación del Decreto Supremo 21060, se da por cerrado el período social-estatista iniciado en 1952, y con las denominadas "Reformas de Segunda Generación" (1993-1997) se profundiza el cambio hacia un modelo con menor intervención del Estado en la economía.

A pesar de los resultados positivos logrados por el ajuste de 1985 y las reformas del período 1993-1997 en materia de estabilidad y crecimiento económico, los logros alcanzados han resultado insuficientes para enfrentar la aguda pobreza en la que se debate una gran parte de los hogares bolivianos, y no se ha logrado reducir la muy baja movilidad social que condena a la marginalidad a importantes sectores de la población. Así, diluidas las esperanzas que se habían cifrado en las reformas, la sociedad boliviana transita hoy sin rumbo definido y con poca esperanza en remontar la crisis.

De acuerdo con los resultados del análisis de los datos para el período 1952–2003, se observa que la economía boliviana ha tenido un comportamiento que podría calificarse de primitivo, es decir que el crecimiento del producto se explica, en gran medida, por el crecimiento poblacional, sin mostrar aumentos importantes en la productividad. La tasa de crecimiento tendencial fue del 2.8 por ciento, mientras que la población creció a un 2.4 por ciento.

Si bien en la segunda mitad del pasado siglo se observan dos ciclos de crecimiento, asociado el primero a la política económica gestada en la matriz conceptual de la Re-

volución de 1952 y el segundo referido a las transformaciones de mercado operadas entre 1985 y 1997, cabe destacar que, en ambos casos, fueron factores externos los que coadyuvaron a estos comportamientos, entre ellos los buenos precios de nuestros productos de exportación, el endeudamiento externo y, en la última fase, la inversión extranjera directa.

En contradicción con lo que generalmente se cree, en el sentido de que el periodo social-estatista fue mejor que el periodo de las reformas de mercado, el análisis de los datos nos muestra que el ciclo caracterizado por una fuerte presencia del Estado en la economía generó una situación más adversa que el ciclo de mayor apertura al mercado. La bondad de un ciclo económico, en términos sociales, no debe ser medida por la tasa máxima de crecimiento que se alcanza en su cima, sino por la profundidad que alcanza la posterior caída y la duración de la fase recesiva. Cuando la economía está en la cima del ciclo, todos mejoran, pero los que más lo hacen son aquellos grupos de ingresos altos y medios, mientras que, cuando la economía cae al fondo del pozo, los más afectados son los más pobres. Asimismo, a mayor duración de la caída no solamente se penaliza a los grupos más vulnerables, sino a las futuras generaciones, ello en tanto que la fase recesiva del ciclo actúa deteriorando el aparato productivo.

En lo que hace a la efectividad de la política económica para impulsar el crecimiento económico, se observa que en la serie 1952-2003 el componente tendencial es dominante respecto al ciclo, de lo que se concluye que la política económica tendrá muy poco efecto sobre el crecimiento. O, en otras palabras, dadas las características de comportamiento de la economía boliviana en el último medio siglo, se predice que la política económica es irrelevante para influir sobre el nivel del producto de largo plazo y, más bien, debería ponerse mayor énfasis en las políticas institucionales, en las reglas y en la inversión en capital humano, antes que en la discrecionalidad de la política económica.

De manera específica, una política fiscal expansiva no muestra efectos positivos en el crecimiento económico. Si bien el primer año muestra un crecimiento por encima de la tendencia, el segundo dicho efecto positivo casi desaparece para, posteriormente, traducirse en tasas de crecimiento por debajo de la tendencia. Respecto a la política monetaria, por las características del modelo, la autoridad monetaria no puede alterar la

cantidad de dinero que posee el público y, por tanto, su radio de acción es muy limitado, más aún en un contexto de elevada dolarización.

La estimación del valor del coeficiente de tendencia para el periodo 1990-2003 nos presenta la tasa de crecimiento natural de la economía boliviana, que alcanza a 4.04 por ciento como tasa de crecimiento anual. El comportamiento de corto plazo nos dice que el ajuste de corto plazo corresponde a 0,78 por ciento cada trimestre, de manera tal que en el plazo de 5 trimestres se absorberían los *shocks*.

Todo lo encontrado en esta investigación nos estaría mostrando las fuertes rigideces que enfrenta la economía boliviana para impulsar el crecimiento, y que las políticas económicas activistas tienen un efecto muy limitado para modificar este comportamiento, de donde se concluye que es necesario apostar a políticas institucionales y de inversión en capital humano que, en el largo plazo, puedan remontar la pobreza que arrastra nuestro país desde hace varias décadas.

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Anexo econométrico

Cuadro 1
Ajuste de la tendencia de crecimiento

Variable dependiente: D(Y)
Método: Mínimos cuadrados
Muestra (ajustada): 1952 2003
Observaciones incluidas: 52 después del ajuste de los puntos extremos

Variable	Coeficiente	Error Std.	Estadístico - t	Prob.
Go	-3.073677	0.003712	-828.1182	0.0000
D(RESMOD1(-1))	3.230580	0.125052	25.83398	0.0000
D(RESMOD1(-2))	-4.027907	0.354294	-11.36884	0.0000
D(RESMOD1(-3))	2.307294	0.353228	6.532018	0.0000
D(RESMOD1(-4))	-0.521040	0.123738	-4.210832	0.0001

R-Cuadrado	0.999880	Prom. de la var. dep.	0.030810
R-Cuadrado ajustado	0.999869	D.S. de la var. dep.	0.020913
S.E. de la regresión	0.000240	C.I. Akaike	-13.73395
Suma de residuos al cuadrado	2.41E-06	C. Schwarz	-13.53713
Log de verosimilitud	327.7479	Estadístico- F	87517.45
Estad Durbin-Watson	1.937820	Prob (Estad-F)	0.000000

Cuadro 2
Modelo de largo plazo

Variable dependiente: PIB (LN)
Método: Mínimos cuadrados
Muestra: 1988:1 2003:4
Observaciones incluidas: 64

Variable	Coeficiente	Error Std.	Estadístico - t	Prob.
C	21.97575	0.014286	1538.324	0.0000
@TREND	0.010151	0.000565	17.95760	0.0000
DL99	-0.057978	0.022530	-2.573434	0.0125

R-Cuadrado	0.921630	Prom. de la var. dep.	22.27740
R-Cuadrado ajustado	0.919061	D.S. de la var. dep.	0.175036
S.E. de la regresión	0.049797	C.I. Akaike	-3.115963
Suma de residuos al cuadrado	0.151267	C. Schwarz	-3.014766
Log de verosimilitud	102.7108	Estadístico- F	358.6814
Estad Durbin-Watson	2.787823	Prob (Estad-F)	0.000000

Cuadro 3
Modelo de corrección de errores

Variable dependiente: DPIB
Método: Mínimos cuadrados
Muestra (ajustada): 1990:3 2003:4
Observaciones incluidas: 54 después del ajuste de los puntos extremos

Variable	Coeficiente	Error Std.	Estadístico - t	Prob.
C	0.031101	0.009056	3.434481	0.0013
RESID99(-1)	-0.236531	0.115378	-2.050049	0.0463
DPIB(-1)	-0.633716	0.141401	-4.481697	0.0001
DPIB(-2)	-0.430793	0.141441	-3.045755	0.0039
DPIB(-3)	-0.407960	0.116160	-3.512058	0.0010
DPIB(-8)	-0.185900	0.065361	-2.844192	0.0067
DPIB(-9)	-0.082813	0.055228	-1.499477	0.1409
D1	-0.051489	0.014511	-3.548175	0.0009
D2	0.049427	0.015919	3.104971	0.0033
DL99	-0.016615	0.005011	-3.315759	0.0018

R-Cuadrado	0.966412	Prom. de la var. dep.	0.008212
R-Cuadrado ajustado	0.959541	D.S. de la var. dep.	0.076253
S.E. de la regresión	0.015338	C.I. Akaike	-5.351422
Suma de residuos al cuadrado	0.010351	C. Schwarz	-4.983091
Log de verosimilitud	154.4884	F-statistic	140.6640
Durbin-Watson stat	2.007704	Prob(F-statistic)	0.000000

Movilidad laboral en Bolivia: una comparación entre empleados de los sectores público y privado*

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Resumen

Varios estudios realizados en Bolivia sugieren que los trabajadores calificados son escasos y que los puestos de trabajo en el sector público son tan atractivos, que el sector privado no puede captar ni mantener a los trabajadores calificados que necesita. Tal tendencia limita fuertemente el crecimiento económico y la reducción de la pobreza, puesto que el sector productivo tiene restricciones en la contratación eficaz de uno de sus factores de producción más importantes.

El presente documento testea esta hipótesis a través de la estimación de modelos estructurales que permitan estudiar los patrones de comportamiento de búsqueda de trabajo de los empleados en Bolivia. Los resultados son consistentes con la hipótesis.

Abstract

This paper estimates structural parameters of both a simple and an extended job separation model with the purpose of understanding constraints in the labor market in Bolivia. The results confirm the hypothesis that skilled labor is a scarce commodity in Bolivia, while unskilled labor is abundantly available. This implies that skilled employees

* Este proyecto de investigación está apoyado por la Fundación Danesa de Ciencias Sociales. Se agradece mucho los comentarios y las sugerencias de Oscar Molina, Beatriz Muriel y un Comité Evaluador del Instituto Nacional de Estadísticas de Bolivia.

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shop around for alternative employment opportunities and quit their jobs when a better opportunity arises. The quit rate among skilled employees in the private sector is much higher than the quit rate among skilled employees in the public sector. The reverse is true for the lay-off rate, and together this suggests that the private sector has difficulties maintaining its skilled labor. The results suggest that the public sector in Bolivia, inflated by high levels of foreign aid (about 10 per cent of GDP), may be detracting scarce human resources from local productive sectors, potentially jeopardizing the opportunity for sustainable development.

1. Introducción

Las remuneraciones del sector público en Bolivia son en general mejores comparadas con las del sector privado. El análisis de todos los empleados (no cuenta propia) de las encuestas MECOVI 2001 y 2002 muestra que el sector público paga salarios mensuales que son, en promedio, 40 por ciento más altos que los percibidos en el sector privado; además de que los empleados del sector público trabajan 10 horas menos por semana (39.5 horas por semana en el sector público versus 49.6 horas en el sector privado, en promedio). Adicionalmente, el 60 por ciento de los empleados en el sector público es personal de planilla y, por lo tanto, se beneficia de los seguros de salud, maternidad, invalidez, vejez, muerte y riesgos profesionales, así como de la protección laboral de acuerdo a la Ley General de Trabajo y a la normativa laboral relacionada. En contraste, solamente el 8 por ciento de los empleados del sector privado goza de tales privilegios. Los puestos de trabajo en el sector público también son más estables; en promedio, un empleado del sector público lleva 5.4 años en la misma institución, mientras uno del sector privado permanece solamente 3.7 años.

Todas las ventajas señaladas (y otras adicionales[1]) asociadas al trabajo en el sector público se constituyen en un factor de distorsión importante en el mercado laboral. No solamente los actuales trabajadores se dirigen hacia el sector público, sino que también lo harán las generaciones futuras. Los estudiantes, racionalmente, escogen carreras con base en los beneficios futuros esperados, provocando así distorsiones en la estructura de calificaciones de la fuerza laboral en favor de las destrezas demandadas por el sector público. Como consecuencia, el país no cuenta con suficientes trabajadores con la capacitación adecuada para desarrollar el sector productivo; situación que obviamente

1 Los puestos en el sector público frecuentemente implican más poder y posibilidades de ganancias extra a través de la corrupción.

obstruye las estrategias bolivianas en torno a un crecimiento económico basado en la producción privada y la exportación.

Las condiciones de trabajo relativamente mejores del sector público en Bolivia solamente son posibles gracias a la significativa ayuda externa que recibe el gobierno boliviano (en promedio, el 10 por ciento del PIB en el periodo 1986-2002). De esta manera, se genera un efecto secundario adverso importante de la ayuda internacional, ya que se disminuye la oferta de trabajadores capacitados para el sector productivo, obstruyendo el desarrollo sostenible del país y la reducción sistemática de la pobreza.

El presente estudio otorga evidencia empírica que muestra la gravedad del problema, a través del análisis de la movilidad laboral en los diferentes sectores y para los diferentes tipos de trabajadores. Específicamente, se usa la información de los empleados sobre el tiempo de permanencia en el actual trabajo, para estimar tasas de renuncia y tasas de despido, en un modelo estructural que explica el comportamiento de búsqueda de trabajo de los empleados.

El único otros estudio disponible que analiza el tema de movilidad laboral en Bolivia fue realizado por Jiménez y Jiménez (2003). Sin embargo, el estudio aborda la movilidad interocupacional entre categorías mucho más amplias (inactivos, informales, formales, empleadores) y no aplica la distinción entre puestos públicos y privados, lo que resulta esencial para comprobar la hipótesis de la presente investigación.

El resto del documento se organiza en la siguiente manera. La Sección 2 explica la teoría sobre la búsqueda de trabajo y la metodología para estimar los parámetros de interés. La Sección 3 detalla los datos utilizados para el estudio y proporciona estadísticas sumatorias sobre salarios y otras condiciones de empleo para diferentes tipos de empleados en Bolivia. La Sección 4 analiza los resultados de las estimaciones y la Sección 5 aborda las conclusiones.

2. Metodología

El estudio se basa en la teoría de Burdett (1978) sobre la búsqueda de trabajo y los determinantes de las tasas de renuncia de los empleados. El modelo es definido de una forma sencilla, a través de los siguientes supuestos. Primero se supone que existen N em-

pleados, $i = 1,..., N$; cada uno recibe un salario dado w_i. Segundo, a cada empleado se le presentan regularmente ofertas de trabajo alternativas; cambia de trabajo si el salario ofrecido es mayor que w_i o permanece si el salario ofrecido es igual o menor. Los salarios ofertados vienen de una función de distribución acumulada, F, lo que significa que la probabilidad de que el salario ofertado sea mayor al salario presente, w_i, es $1-F(w_i)$.

Tercero, la probabilidad de que el trabajador reciba una oferta durante un periodo determinado es igual a λ. Así, la probabilidad de recibir y aceptar una oferta en el periodo es $\lambda\,(1-F(w_i))$. Finalmente, la probabilidad de que un trabajador sea despedido durante el periodo es igual a δ.

En base a los supuestos señalados, la tasa de separación del trabajo es determinada a través de dos componentes: $d = \delta + \lambda\,(1-F(w))$, donde δ representa la tasa de despidos y $\lambda\,(1-F(w))$ corresponde a las renuncias. La tasa de separación muestra que, a medida que el salario de un empleado aumenta, la probabilidad de recibir una mejor oferta laboral disminuye y, por lo tanto, el riesgo de que el trabajador se separe de su empresa es menor. De esta manera, una política de salarios altos permite mantener a los trabajadores en la empresa.

Después de la estimación de este modelo básico, se analiza también una versión ampliada, posibilitando que λ dependa de w, $\lambda = \lambda(w)$. En este caso, el trabajador puede decidir buscar activamente trabajos alternativos, generando más ofertas. Como la búsqueda de trabajos alternativos es costosa, especialmente en términos de horas destinadas a tal actividad, se espera que los salarios altos desincentiven los esfuerzos de búsqueda de ofertas alternativas. Suponiendo que las ofertas dependen linealmente del salario, se define la siguiente relación: $\lambda(w) = a + bw$, donde se trabaja con la hipótesis de que $b < 0$. Así, un salario alto implica que es menos importante para el trabajador buscar trabajo.

En algunos países desarrollados se ha verificado que $b < 0$ para todos los tipos de trabajadores (hombres y mujeres, calificados y no calificados, etc.), lo que muestra que los empleados buscan activamente mejores puestos de trabajo, especialmente los que tienen salarios relativamente bajos (por ejemplo: Christensen *et al.*, 2005). En los países menos desarrollados, sin embargo, es posible encontrar resultados contrarios, debido a imperfecciones en el mercado laboral, poca transparencia en las contrataciones y existencia de un significativo sector informal.

La tasa de separación $d(w)$ del modelo no depende de la duración del empleo presente, por lo que puede ser modelada a través de una distribución exponencial con la función de densidad $h(T) = d\exp(-dT)$ y la función de distribución acumulada $H(T) = 1-\exp(-dT)$, donde T es la duración en el presente trabajo. A partir de las funciones anteriores, es posible calcular la probabilidad de que un trabajador permanezca en la empresa por lo menos un año ($I_{mover} = 0$), como $P_{stayer} = P(T > 1) = 1-P(T < 1) = 1-(1-\exp(-d1)) = \exp(-d)$. La probabilidad de no permanecer en la empresa es entonces $P_{mover} = 1 - P_{stayer} = 1-\exp(-d)$.

Para una muestra de N trabajadores, la función logaritmica de verosimilitud es la siguiente:

$$\log L(\theta) = \sum_{i=1}^{N} (\log(P_{stayer}(i))I_{stayer} + \log(P_{mover}(i))I_{mover}(i))$$

$$= \sum_{i=1}^{N} (-d(i;\theta)I_{stayer} + \log(1 - \exp(-d(i;\theta)))I_{mover}(i)).$$

Donde: $d(i; \theta) = \delta + \lambda(w_i)(1 - F(w_i))$. En el modelo más simple, los parámetros θ a estimarse son simplemente δ y λ, mientras que en el modelo ampliado son δ, a y b.

La función logaritmica de verosimilitud será maximizada numéricamente usando las funciones estándar de Stata 8.0.

3. Datos

Los datos utilizados en el estudio fueron extraidos de dos Encuestas sobre Condiciones de Vida efectuadas en Bolivia en los años 2001 y 2002. A pesar de que cada encuesta cubre más de 20.000 personas, en la encuesta del 2001 solamente 2.870 personas son empleados en edad de trabajar (entre 15 y 64 años) y 2.998 personas la del año 2002. Los empleados de las dos encuestas fueron agrupados para formar la muestra de 5.868 personas que se analiza en esta investigación. Los salarios observados en el año 2001 fueron multiplicados por el factor 1,052, con el propósito de hacerlos comparables con los salarios del 2002[2].

2 El salario promedio calculado en Bolivia entre los años 2001 y 2002 se incrementó en 5,2 por ciento, incremento menor que la tasa de devaluación (9,1 por ciento), pero mayor que la tasa de inflación (2,3 por ciento) (datos calculados por el Banco Central de Bolivia entre el 1ro de noviembre del 2001 y el 1ro de noviembre del 2002). Se emplea el factor 1,052 para hacer comparables los salarios de los dos años.

Las bases de datos contienen información del salario corriente y del tiempo en el actual trabajo, pero no de los salarios pasados. Para el tiempo de permanencia en la actual empresa se calcula el indicador I_{mover} otorgando el valor de 1 si el tiempo en la actual empresa es menor que 52 semanas y 0 si es igual o mayor a las 52 semanas. No se conoce el nivel salarial al comienzo del periodo (52 semanas antes de la fecha de la encuesta), por lo que se lo asume igual al salario a la fecha de la encuesta. Este supuesto es bastante razonable para los empleados que se mantuvieron en un mismo trabajo, pero menos aplicable para el caso de los empleados que cambiaron de trabajo, debido a que esta decisión podría haber tenido como objeto incrementar su salario. Sin embargo, la estimación explota sobre todo la variación de los salarios entre diferentes individuos, y esta variación es considerablemente mayor que cualquier incremento salarial que un individuo pueda tener al cambiar de trabajo. El posible sesgo puede implicar que las estimaciones de *b* estén ligeramente en el lado conservador (sesgado hacia cero).

Los empleados de la muestra son agrupados en tres diferentes tipos de contratos, que se espera afecten su comportamiento en la búsqueda de trabajo: 1) Contratos de tiempo limitado, 2) Contratos con ítem, y 3) Sin contrato. Cerca del 60 por ciento de las relaciones empleado–empleador se caracterizan por la ausencia de contratos formales. A pesar de que la legislación boliviana del trabajo estipula que cualquier empleado que está por más de 6 meses en la misma empresa cuenta con protección laboral como si tuviera un contrato, los trabajadores están esencialmente desprotegidos porque esto en general no se cumple.

En el Cuadro 1 se muestra la distribución de empleados de los tres grupos por sector y tipo de contrato. Se observa que la mayoría de los empleados del sector público (60 por ciento) tienen contratos con ítem, es decir, aquéllos que cuentan con una elevada demanda debido al alto grado de seguridad que proporcionan a los trabajadores. Se podría esperar que fuera menos probable que las personas con este tipo de trabajos estables se ocupen de buscar otro trabajo, en comparación con las personas con contratos de tiempo limitado o sin contratos. En contraste, la mayoría (76 por ciento) de los trabajadores del sector privado no cuentan con ningún tipo de contrato de trabajo.

Cuadro 1
Número de empleados en los datos, por sector y tipo de contrato

# de empleados	Contratos de tiempo limitado	Contratos con ítem	Sin contrato	Total
Sector público	356	1037	349	1742
Sector privado	677	317	3132	4126
Total	1033	1354	3481	5868

Fuente: Calculado por los autores con datos de las Encuestas de Condiciones de Vida (MECOVI) de 2001 y 2002 en Bolivia.

El Cuadro 2 muestra el salario promedio por hora trabajada para cada uno de los 12 subgrupos. En promedio, los empleados del sector público ganan salarios que son aproximadamente 82 por ciento mayores que de los empleados del sector privado, creando un incentivo adicional para buscar trabajos en el sector público.

Las personas sin contrato ganan, en promedio, menos de la mitad que las personas con ítem o con contratos de tiempo limitado.

Cuadro 2
Tasa promedio de salarios (2002-Bs./hora) de los empleados en los datos, por sector y tipo de contrato

Salario promedio (2002-Bs./hora)	Contratos de tiempo limitado	Contratos con ítem	Sin contrato	Total
Sector público	10.11	12.46	6.53	10.79
Sector privado	8.94	13.09	4.56	5.93
Total	9.35	12.61	4.76	7.38

Fuente: Calculado por los autores con datos de las Encuestas de Condiciones de Vida (MECOVI) de 2001 y 2002 en Bolivia.

Se esperaría que, cuanto mayor sea el salario y mejores las condiciones de seguridad laboral, más personas querrán mantener sus trabajos actuales. El Cuadro 3 muestra una relación negativa alta entre seguridad laboral y cambio de trabajo, mientras que la relación entre salarios y cambio de trabajo es menor. La probabilidad de haber cambiado de traba-

jo durante los últimos 12 meses es aproximadamente 9 por ciento para las personas con contratos con ítem, 33 por ciento para las personas con contratos de tiempo limitado y 39 por ciento para las personas sin contrato. Debido al predominio de contratos con ítem en el sector público, los cambios son mucho menos frecuentes que en el sector privado.

Cuadro 3
Probabilidad promedio de cambio de trabajo de los empleados durante los últimos 12 meses, por sector y tipo de contrato

P_{mover}	Contratos de tiempo limitado	Contratos con ítem	Sin contrato	Total
Sector público	0.393	0.088	0.375	0.208
Sector privado	0.292	0.079	0.389	0.349
Total	0.327	0.086	0.388	0.307

Fuente: Calculado por los autores con datos de las Encuestas de Condiciones de Vida (MECOVI) de 2001 y 2002 en Bolivia.

El Cuadro 4 presenta el número promedio de semanas en la empresa/institución actual, y es evidente que la duración del trabajo de los empleados del sector público es substancialmente mayor que los del privado. El tiempo en la actual institución es casi 50 por ciento, o 21 meses, mayor para los empleados del sector público en comparación con el sector privado, siendo este resultado una consecuencia del predominio de contratos con ítem de los empleados en el sector público, como se ha mostrado en el Cuadro 1.

Cuadro 4
Número promedio de semanas en el trabajo hasta la fecha del estudio, por sector y tipo de contrato

Número promedio de semanas en el trabajo	Contratos de tiempo limitado	Contratos con ítem	Sin contrato	Total
Sector público	173	348	195	282
Sector privado	182	381	174	191
Total	180	356	176	218

Fuente: Calculado por los autores con datos de las Encuestas de Condiciones de Vida (MECOVI) de 2001 y 2002 en Bolivia.

Es importante notar que la distribución de las duraciones de trabajo es extremadamente sesgada. Las duraciones cortas o menores a un año son las más comunes, pero los promedios se elevan por algunos trabajadores que han estado entre 30 y 40 años en la misma compañía o institución.

El Cuadro 5 muestra que el nivel promedio de la educación entre los empleados es de 10 años. En promedio, los empleados del sector público tienen aproximadamente 4.2 años más de educación que los empleados del sector privado, lo que ayuda a explicar por qué los empleados del sector público ganan mayores salarios.

Cuadro 5
Años promedio de educación de los empleados, por sector y tipo de contrato

Años promedio de educación	Contratos de tiempo limitado	Contratos con ítem	Sin contrato	Total
Sector público	11.8	14.5	9.9	13.0
Sector privado	11.2	12.5	7.9	8.8
Total	11.4	14.0	8.1	10.0

Fuente: Calculado por los autores con datos de las Encuestas de Condiciones de Vida (MECOVI) de 2001 y 2002 en Bolivia.

La teoría asume que las decisiones de cambios de trabajo se realizan basadas en los salarios ofrecidos, antes que en cálculos más complicados e inciertos sobre los retornos esperados de cambiar de trabajo. Este último aspecto demandaría el conocimiento de la duración esperada del trabajo y de los incrementos esperados de los salarios durante el periodo futuro de empleo, así como de la misma información para todos los empleos futuros. Tal información es extremadamente incierta en Bolivia, siendo bastante razonable asumir que las personas realizan sus decisiones de cambio de trabajo casi exclusivamente de acuerdo al salario ofrecido.

El Cuadro 6 muestra un resumen de estadísticas de las distribuciones de salarios ofrecidos para todos los empleados y varias submuestras, calculadas en base a los salarios de los empleados que recientemente cambiaron de trabajo (durante las 52 semanas anteriores a la encuesta).

El salario promedio ofrecido es de Bs. 5.24/hora, correspondiente a aproximadamente US$ 0.70/hora, siendo mucho mayor para los trabajadores calificados (Bs. 7.74/hora) que para los no calificados (Bs. 3.88/hora), mientras que no existen diferencias significativas entre los salarios ofrecidos para hombres y para mujeres[3]. El salario promedio es mayor en las áreas urbanas (Bs. 5.53/hora) que en las rurales (Bs. 4.45/hora), aunque la brecha es sorpresivamente pequeña. Hay que recordar que el análisis solamente incluye empleados, no los trabajadores familiares y de cuenta propia, que no reciben salarios regulares.

Los trabajadores indígenas ganan en promedio cerca de 16 por ciento menos que los trabajadores no indígenas, aunque la diferencia en los niveles de educación es pequeña (9.7 años para los trabajadores indígenas versus 10.3 años para los no indígenas). Los empleados del sector público ganan en promedio 72 por ciento más que los empleados del sector privado. Esto se explica en parte por las diferencias en los niveles de educación y experiencia, pero, incluso al controlar estos factores, la diferencia de salarios ofrecidos entre el sector público y el privado sigue siendo alta.

Mientras los trabajadores no calificados son prácticamente indiferentes a trabajar en el sector público o en el privado, la diferencia de preferencias es significativa para los trabajadores calificados. El salario promedio ofrecido en el sector público para éstos es 86 por ciento mayor que el salario promedio ofrecido en el sector privado. Esto podría ser explicado por la elevada proporción de personas mayores, mejor educadas y con mayor experiencia en el sector público. Pero incluso observando subgrupos muy homogéneos, como empleados calificados jóvenes (< 35 años), se encuentra que los salarios ofrecidos son 84 por ciento mayores para el sector público. La brecha salarial entre el sector público y el sector privado es mayor para los trabajadores calificados urbanos, siendo el salario en promedio el doble al ofrecido en el sector privado. (Ver Cuadro 6)

3 Sin embargo, solamente 26 por ciento de los empleados son mujeres, lo que sugiere que hay discriminación en el acceso a buenos puestos de trabajo, pero no en el nivel de salarios que ganan, una vez que son empleadas.

Cuadro 6

Salarios ofrecidos según diferentes subgrupos de empleados (Bs./hora)

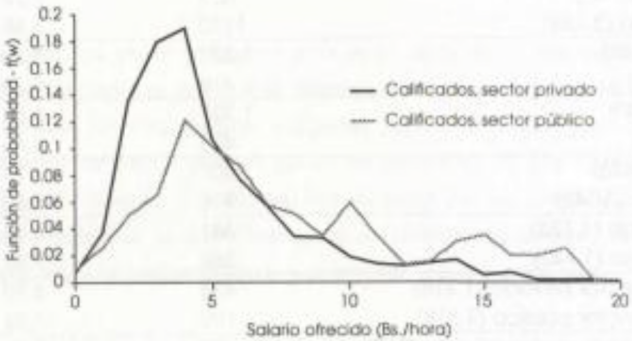
Grupo (# de personas en el grupo)	# de empleados que han cambiado trabajo dentro de 52 semanas	Salario ofrecido	
		Media	Desv. St
Todos los empleados (5,868)	1,803	5.24	7.16
Calificado (2,736)	633	7.74	10.76
No calificado (3,132)	1170	3.88	3.42
Hombre (4,143)	1,327	5.23	6.64
Mujer (1,725)	476	5.24	8.46
Urbano (4,440)	1,327	5.53	7.96
Rural (1,428)	476	4.45	4.20
Indígena (2,826)	807	4.75	6.37
No indígena (3,042)	996	5.63	7.72
Sector privado (4,126)	1,441	4.58	5.65
Sector público (1,742)	362	7.87	10.95
Calificado, sector privado (1,418)	434	6.10	8.59
Calificado, sector público (1,318)	199	11.32	13.67
Calificado, joven, sector privado (977)	350	5.39	8.16
Calificado, joven, sector público (571)	137	9.92	13.29
Calificado, mayor, sector privado (441)	84	9.08	9.71
Calificado, mayor, sector público (747)	62	14.41	14.09
Urbano, calificado, privado (1,298)	390	6.22	8.97
Urbano, calificado, público (1,035)	153	12.58	14.57
Rural, calificado, privado (129)	44	5.07	3.74
Rural, calificado, público (283)	46	7.11	9.04
No calificado, sector privado (2,708)	1,007	3.92	3.53
No calificado, sector público (424)	163	3.67	2.57
Contrato de tiempo limitado, privado (677)	198	6.42	6.41
Contrato de tiempo limitado, público (356)	140	7.61	12.33
Contrato con ítem, privado (292)	25	13.93	17.96
Contrato con ítem, público (1,037)	91	12.47	12.71
Sin contrato, privado (3,132)	1,218	4.09	4.71
Sin contrato, público (349)	131	4.95	5.94

Fuente: Calculado por los autores con datos de las Encuestas de Condiciones de Vida (MECOVI) de 2001 y 2002 en Bolivia.

Adicionalmente a lo señalado, se observa que la varianza de los salarios ofrecidos en el sector público es mucho mayor. El Gráfico 1 muestra que la oferta de salarios para tra-

bajadores calificados en el sector privado se encuentra concentrada entre Bs. 1 y Bs. 8/hora, mientras los salarios ofrecidos en el sector público son más dispersos, con muchas más observaciones entre Bs. 10 y Bs. 20/hora. Ambas distribuciones tienen colas largas a la derecha; sin embargo, mientras la distribución de ofertas del sector público tiene 13 por ciento de la distribución entre Bs. 20 y Bs. 100, el sector privado sólo tiene el 5 por ciento.

Gráfico 1: Distribución de oferta de salarios para trabajadores calificados, por sector (Bs./hora)



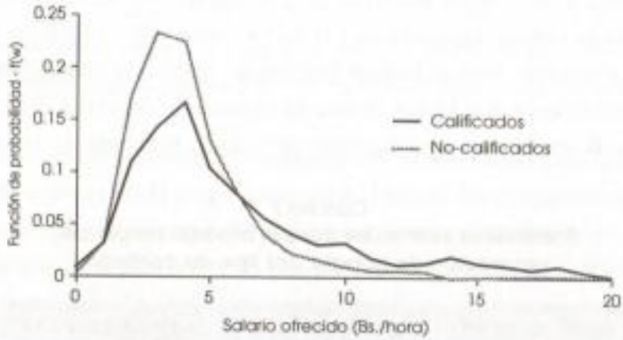
Fuente: Calculado por los autores con datos de las MECOVIs de 2001 y 2002 en Bolivia.

Nota: Por motivos de representación, la distribución es truncada en Bs. 20/hora; sin embargo, cerca de 13 por ciento de la oferta de salarios del sector público y 5 por ciento de salarios ofrecidos del sector privado se encuentran en el intervalo entre Bs. 20 y Bs. 100/hora.

La diferencia en el salario promedio ofrecido entre los trabajadores calificados del sector público y del sector privado es alta, incluso mayor que la diferencia entre los trabajadores calificados y los no calificados (ver Gráfico 2).

El resumen de estadísticas presentado en los Cuadros 1-6 muestra que el sector público en Bolivia no solamente ofrece salarios mucho más atractivos que el sector privado, sino también trabajos de mayor duración y mejores condiciones, incluyendo seguros de salud, seguros de trabajo, cotizaciones a la seguridad social, etc. Adicionalmente, los trabajadores del sector público trabajan substancialmente menos horas que en el sector privado (39.5 horas/semana promedio, en comparación con 49.5 horas /semana).

Gráfico 2: Distribución de oferta de salarios, por nivel de capacitación (Bs./hora)



Fuente: Calculado por los autores con datos de las MECOVIs de 2001 y 2002 en Bolivia.

Nota: Por motivos de representación, la distribución es truncada en Bs. 20/hora; sin embargo, cerca de 8 por ciento de los salarios ofrecidos para trabajadores calificados se encuentran entre Bs. 20 y Bs. 100/hora, mientras 1 por ciento de los salarios ofrecidos para trabajadores no calificados caen en este intervalo.

Dadas las ventajas laborales existentes en el sector público, se puede esperar que el sector privado tenga dificultades para atraer y mantener trabajadores calificados, al menos si la fuerza de trabajo calificada es un factor de producción escaso. Esta hipótesis es testeada en la siguiente sección.

4. Estimación de resultados

En esta sección se discuten los resultados del modelo simple de separación de trabajo. Estos resultados permitirán descomponer las tasas de separación de trabajo en aquella parte determinada por el empleador (despidos) y aquella otra determinada por los empleados (renuncias). Seguidamente, se presentan los resultados del modelo ampliado de separación de trabajo, que permiten evaluar la sensibilidad de los esfuerzos de búsqueda de trabajo respecto a los salarios.

Despidos versus renuncias

Para todos los empleados de la muestra, la tasa exógena de destrucción de trabajo (tasa de despidos), δ, fue estimada en 0.167 por año, mientras que la tasa de llegada

de ofertas, λ, fue estimada en 0.522 por año (ver Cuadro 7). La suma, $\delta + \lambda = 0.689$, es la tasa de separación de trabajo estimada para el trabajo con menor salario, implicando una duración de trabajo esperada de $1/0.689 = 1.45$ años o 17 meses para trabajos de menor remuneración. Para el trabajo con mayor salario, la probabilidad de recibir una mayor oferta es cero, por lo que la tasa de separación esperada del trabajo es sólo la tasa exógena, δ, implicando una duración del trabajo esperada de $1/0.167 = 6$ años.

Cuadro 7
Parámetros estimados para el modelo simple de separación de trabajo, por tipo de contrato

Grupo (# observaciones)	δ (error estándar)	λ (error estándar)	δ + λ
Empleados (5,868)	0.167 ***	0.522 ***	
	(0.012)	(0.032)	0.689
Contrato de tiempo	0.212 ***	0.461 ***	
limitado (1,033)	(0.032)	(0.078)	0.673
Contrato con	0.073 ***	0.038 -	
ítem (1,354)	(0.015)	(0.029)	0.111
Sin contrato (3,481)	0.373 ***	0.258 ***	
	(0.023)	(0.047)	0.631

Fuente: Estimaciones de los autores.
Notas: *** Significativo al nivel de 1 por ciento, ** Significativo al nivel de 5 por ciento, * Significativo al nivel de 10 por ciento , - No significativo incluso al nivel de 10 por ciento.

El Cuadro 7 también muestra que la división entre destrucción de trabajo exógena y endógena sólo existe para los empleados sin contratos o con contratos de tiempo limitado. Para los empleados de contrato con ítem, toda separación del trabajo está determinada exógenamente. Los trabajadores afortunados que han obtenido un contrato seguro, con todos los beneficios laborales, no pensarían en dejarlo voluntariamente.

Mientras que la tasa de renuncia de los empleados de contratos con ítem es cercana a cero, la tasa de despido para este grupo es también muy baja. Esto implica que la duración esperada de trabajo es de aproximadamente 14 años, independientemente del nivel del salario. En contraste, la duración esperada de trabajo para los trabajadores con contrato de tiempo limitado o sin contrato es sólo de 18 meses, con una considerable sensibilidad al nivel salarial.

El Cuadro 8 muestra la estimación de los parámetros estructurales del modelo simple de separación de trabajo por nivel de capacitación. Los empleados que han terminado la educación secundaria, o tienen otro tipo de educación de al menos 12 años de duración, son considerados calificados, mientras el resto es considerado no calificado.

Mientras las duraciones de trabajo esperadas son muy similares para los empleados con los salarios más bajos en cada grupo (cerca de 20 meses), los componentes de despidos y renuncias difieren dramáticamente. Para los trabajadores calificados, la tasa de despidos es sólo de 8.8 por ciento al año, mientras que para los empleados no calificados es de 36.7 por ciento. En comparación, la tasa de llegada de ofertas para trabajadores calificados es de 50.7 por ciento por año, mientras para los trabajadores no calificados es sólo de 22.0 por ciento. Esto sugiere que los empleados calificados presentan una oferta relativamente pequeña, mientras que los trabajadores no calificados tienen una oferta abundante.

Cuadro 8
Parámetros estimados para el modelo simple de separación de trabajo, por nivel de capacidad

Grupo (# observaciones)	δ (error estándar)	λ (error estándar)	$\delta + \lambda$
Empleados calificados (2.736)	0.088 *** (0.012)	0.507 *** (0.040)	0.595
Empleados no calificados (3.132)	0.367 *** (0.024)	0.220 *** (0.048)	0.587

Fuente: Estimaciones de los autores.
Notas: *** Significativo al nivel de 1 por ciento, ** Significativo al nivel de 5 por ciento, * Significativo al nivel de10 por ciento.

El Cuadro 9 hace una distinción entre empleados de los sectores público y privado. Se observa claramente que la tasa de separación del trabajo es mucho menor para empleados calificados del sector público que para todos los otros grupos. Para los trabajadores con menor salario en el sector público, el promedio de la tasa de separación del trabajo es sólo de 29 por ciento por año, mientras que para los trabajadores calificados con menor salario en el sector privado es de 72 por ciento. Para los trabajadores calificados con mayor salario, la tasa de separación del trabajo es también mucho mayor en el sector privado en comparación con el sector público. Esto sugiere que el sector público en Bolivia está ganando en la competencia de atraer trabajadores calificados, a costa del sector privado.

Cuadro 9
Parámetros estimados para el modelo simple de separación de trabajo, por nivel de capacitación y sector

Grupo (# observaciones)	δ (error estándar)	λ (error estándar)	δ + λ
Sector público, calificados (1.318)	0.084 *** (0.016)	0.204 *** (0.042)	0.288
Sector público, no calificados (424)	0.254 *** (0.054)	0.597 *** (0.040)	0.851
Sector privado, calificados (1.418)	0.156 *** (0.023)	0.565 *** (0.065)	0.721
Sector privado, no calificados (2.708)	0.388 *** (0.027)	0.164 *** (0.052)	0.552

Fuente: Estimaciones de los autores.
Notas: *** Significativo al nivel de 1 por ciento, ** Significativo al nivel de 5 por ciento, * Significativo al nivel de 10 por ciento, -No significativo incluso al nivel de 10 por ciento.

En las últimas dos décadas se han dado enormes cambios en el aparato productivo de Bolivia; las capacidades que aplicaban los trabajadores en las típicas empresas estatales, antes de la liberalización de 1985, pueden ser hoy menos útiles en las empresas privatizadas de la economía de libre mercado. La seguridad laboral era relativamente mayor antes de la liberalización, esperando, por consiguiente, que los trabajadores de mayor edad (en este estudio definidos como de 35 años o más) estén menos acostumbrados e inclinados a la búsqueda de alternativas de oportunidades de trabajo en comparación con los trabajadores jóvenes. Al mismo tiempo, se podría esperar que la demanda por los trabajadores calificados jóvenes sea mayor, dado que éste es el grupo que probablemente tenga las capacidades necesarias para la estructura de compañías e instituciones presentes en las economías de libre mercado.

El Cuadro 10 muestra los parámetros de separación de trabajo estimados para los trabajadores calificados, por edad y sector. Como se esperaba, la tasa de separación de trabajo ($\delta + \lambda$) es considerablemente mayor para los trabajadores calificados jóvenes que para los trabajadores calificados de mayor edad, y más alta en el sector privado que en el público.

Cuadro 10
Parámetros estimados para el modelo simple de separación de trabajo, empleados calificados, por edad y sector

Grupo (# observaciones)	δ (error estándar)	λ (error estándar)	δ + λ
Sector público, joven	0.169 ***	0.256 ***	
(571)	(0.036)	(0.083)	0.425
Sector público, mayor	0.067 ***	0.044 -	
(747)	(0.019)	(0.039)	0.113
Sector privado, joven	0.243 ***	0.498 ***	
(977)	(0.035)	(0.086)	0.741
Sector privado, mayor	0.091 ***	0.341 ***	
(441)	(0.029)	(0.086)	0.432

Fuente: Estimaciones de los autores.
Notas: *** Significativo al nivel de 1 por ciento, ** Significativo al nivel de 5 por ciento, * Significativo al nivel de 10 por ciento, -No significativo incluso al nivel de 10 por ciento.

La tasa de renuncia, λ, para los trabajadores calificados jóvenes en el sector privado es de casi 50 por ciento por año, mientras que para los trabajadores calificados jóvenes en el sector público es sólo cercano al 26 por ciento por año. Este resultado nuevamente respalda la hipótesis de que el sector privado tiene dificultades compitiendo con el sector público por los trabajadores más calificados.

En la siguiente sección se testea en qué medida el sector privado puede ser capaz de mantener al personal calificado incrementando salarios.

Sensibilidad de la búsqueda de trabajo con respecto al salario

El Cuadro 11 muestra los parámetros estructurales estimados para el modelo ampliado de separación de trabajo. Para empleados en general, no se ha obtenido el esperado signo negativo de *b*. En cambio, se obtiene un signo positivo significativo, indicando que los salarios mayores hacen que las personas estén más inclinadas a buscar empleos alternativos y a generar ofertas de trabajo alternativas. Esto nuevamente sugiere que los empleados calificados son escasos y que tienen alternativas de oportunidades de empleo disponibles para ellos, mientras que los empleados no calificados se consideran afortunados por tener un trabajo, y no estarían dispuestos a dejarlo voluntariamente.

La división entre empleados calificados y no calificados del Cuadro 11 muestra que el parámetro *b* positivo encontrado para todos los trabajadores está determinado principalmente por las personas no calificadas. Las personas calificadas, en comparación, presentan el esperado signo negativo para *b*, indicando que, a medida que su salario es mayor, menor es la probabilidad de renuncia.

Esto sólo se sostiene para personas calificadas del sector público; sin embargo, el Cuadro 12 muestra que el coeficiente *b* para personas calificadas en el sector privado no es negativo, indicando que los empleadores en el sector privado podrían no ser capaces de retener a sus trabajadores calificados incrementando los salarios. Esto se mantiene para todos los subgrupos: jóvenes y mayores, indígenas y no indígenas, rural y urbano, hombres y mujeres trabajadores calificados (resultados no mostrados).

Cuadro 11
Parámetros estimados para el modelo ampliado de separación de trabajo, por nivel de calificación

Grupo (# observaciones)	δ (error estándar)	λ (error estándar)	*B* (error estándar)
Empleados	0.096 ***	0.398 ***	0.094 ***
(5.868)	(0.020)	(0.042)	(0.022)
Calificados	0.228 ***	0.632 ***	-0.101 ***
(2.736)	(0.042)	(0.053)	(0.026)
No calificados	0.294 ***	0.113 *	0.103 ***
(3.132)	(0.035)	(0.058)	(0.037)

Fuente: Estimaciones de los autores.
Notas: *** Significativo al nivel de 1 por ciento, ** Significativo al nivel de 5 por ciento, * Significativo al nivel de 10 por ciento, - No significativo al nivel de 10 por ciento

Cuadro 12
Parámetros estimados para empleados calificados, por sector

Grupo (# observaciones)	δ (error estándar)	*A* (error estándar)	*B* (error estándar)
Sector privado, calificados	0.137 ***	0.539 ***	0.020 –
(1.418)	(0.044)	(0.084)	(0.022)
Sector público, calificados	0.325 ***	0.302 **	-0.094 ***
(1.318)	(0.062)	(0.058)	(0.020)

Fuente: Estimaciones de los autores.
Notas: *** Significativo al nivel de 1 por ciento, ** Significativo al nivel de 5 por ciento, * Significativo al nivel de 10 por ciento, – No significativo al nivel de 10 por ciento.

Los resultados anteriores confirman la hipótesis de que el sector privado tiene serias dificultades para competir con el sector público, cuando se trata de atraer y mantener trabajadores calificados. Incluso si el sector privado incrementara salarios (comprometiendo competitividad), los trabajadores calificados seguirían siendo difíciles de retener, a medida que ellos tiendan constantemente a buscar mejores ofertas de trabajo.

5. Conclusiones

El presente estudio ha estimado parámetros estructurales en dos modelos de separación de trabajo, simple y ampliado, con el propósito de entender las restricciones del mercado de trabajo en Bolivia. Los resultados son consistentes con la hipótesis de que el trabajo calificado es un factor de producción escaso en Bolivia, mientras que el trabajo no calificado está disponible abundantemente. Esto implica que los trabajadores calificados buscan alternativas de trabajo y renuncian a sus trabajos cuando aparece una mejor oportunidad. Por otra parte, los trabajadores no calificados se consideran afortunados por estar empleados, y es menos probable que se ocupen de buscar otro empleo. Sabiendo que existe una alta tasa de trabajadores desocupados, subempleados, o cuenta propias, las personas no calificadas estarían contentas de tener un empleo regular con pago estable, sin importar cuán bajo pueda ser el salario.

La existencia de desempleo entre personas calificadas no es inconsistente con la escasez de gente calificada en general. Es posible que la gente calificada desempleada no tenga las calificaciones específicas demandadas, o puede ser que estén esperando una oferta de trabajo estable y no acepten condiciones sin contratos estables, con menores sueldos y sin seguridad social.

La tasa de renuncia entre empleados calificados en el sector privado es mucho mayor que en el sector público, sucediendo lo contrario para la tasa de despido. Estos resultados, conjuntamente, sugieren que el sector privado tiene dificultades para mantener sus trabajadores calificados. Este sector podría tratar de mejorar su capacidad de retener empleados calificados incrementando los salarios, pero los parámetros de sensibilidad al salario estimados en este estudio sugieren que esta medida no sería efectiva, puesto que, aparentemente, los empleados calificados en el sector privado no van a reducir su búsqueda de trabajo en respuesta a salarios mayores.

El análisis proporcionado en el presente documento sugiere varias iniciativas de política pública. Primero, sería importante aumentar la oferta de trabajadores con calificaciones adecuadas para el desarrollo del sector productivo formal en Bolivia. Esto incluye no solamente capacidades técnicas y gerenciales, sino también el desarrollo del espíritu necesario para emprender nuevas empresas. También sería importante aliviar las restricciones para el acceso al crédito para nuevos emprendimientos empresariales en el mercado financiero.

Existe una infinidad de oportunidades productivas en Bolivia, pero poca gente calificada se anima a aprovecharlas, porque no saben cómo, y porque un trabajo estable y tranquilo en el sector público, o una serie de consultorías para la cooperación internacional, les resulta más atractivo. Esta resistencia a iniciar una actividad productiva no solamente se debe a la atracción relativa del sector público, sino también a las obstrucciones burocráticas que enfrentan las empresas formales en Bolivia, inclusivo el nivel muy elevado de impuestos, tomando en cuenta que existe un gran sector de empresas informales y contrabandistas. Adicionalmente, la inseguridad jurídica y política que enfrentan las empresas exitosas (bloqueos, paros, incertidumbre sobre las reglas del juego, riesgo de nacionalización, etc.) tampoco inspira la inversión en actividades productivas. Crear un ambiente menos hostil para la inversión privada es de suma importancia para desarrollar el sector productivo y crear puestos de trabajo más atractivos.

La cooperación internacional obviamente no puede apoyar a empresas privadas directamente, ya que esto crearía aún mayores distorsiones. Sin embargo, puede hacerlo en el mejoramiento de la formación empresarial de los bolivianos (dentro y fuera del país) y hay mucho más que se puede hacer para mejorar el clima para la inversión privada en Bolivia y el acceso a crédito y capital de riesgo.

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Macroeconomic Policies to Increase Social Mobility and Growth in Bolivia*

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Abstract

Poverty in Bolivia continues to be among the highest in Latin America despite decades of concerted national and international efforts to reduce it. The external aid has been generous and foreign direct investment has boomed; nevertheless, average productivity and incomes remain at the same low level as they were 50 years ago.

This paper suggests that the failure of previous development policies is due to a lack of social mobility in the country. Without social mobility, there is little incentive for people to invest in human and physical capital, and without investment there cannot be productivity growth. In addition, the lack of social mobility implies an inefficient use of human capital, and it hinders the construction of efficient social mechanisms for redistribution and consumption smoothing over the life-cycle.

Resumen

La pobreza en Bolivia es una de las más altas de Latinoamérica y, a pesar de los grandes esfuerzos nacionales, así como de la generosa cooperación externa, la situación no ha cambiado substancialmente en los últimos cincuenta años.

* This paper was prepared for The North-South Institute in the context of the Institute's project: "Macroeconomic Policy Choices for Growth and Poverty Reduction." The very constructive comments received from Rodney Schmidt, Clive W. J. Granger and Bent Jesper Christensen are highly apreciated, as is the help we received from our research assistant, Luis F. Lima Soria.

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Esta investigación sugiere que los fracasos de las políticas para reducir la pobreza se deben a una muy baja movilidad social que caracteriza a la economía y la sociedad bolivianas. Una reducida movilidad social implica la inexistencia de incentivos para que la gente invierta en capital humano. Sin incrementos en la inversión en capital humano, el crecimiento que se puede lograr será muy reducido.

1. Introduction

Poverty in Bolivia has become an endemic phenomenon. We were poor yesterday, we are poor today and, most likely, we will be poor tomorrow. Bolivia has experimented with almost all conceivable economic policies. We have nationalized, denationalized, privatized, capitalized and nationalized again, while we continue to be stuck in poverty. We have applied Keynesian programs to overcome economic crises and the results obtained were tremendously negative. Increased public expenditures only resulted in larger fiscal deficits, devaluations did not have a perceptible effect on our balance of payments (on the contrary, they only further restricted the productive apparatus by raising the prices of imported capital goods), and an expansive monetary policy only resulted in a reduction of net international reserves and a reduction in the purchasing power of the local currency due to inflationary pressures.

Foreign aid to Bolivia has been extremely generous, in some years surpassing 10 per cent of GDP. The same holds for Foreign Direct Investment (FDI) which has been attracted by Bolivia's large reserves of natural gas and petroleum and by the privatization and liberalization of telephony, electricity, and several other important service sectors (Nina y te Velde, 2003). While these large, targeted inflows of dollars have clearly contributed to improving access to basic services such as education, health, water, sanitation, electricity and telecommunication, the income earning capacity of the Bolivian people remains at the same level as it was 50 years ago (Andersen y Evia, 2003).

Due to a concerted poverty reduction strategy, heavily supported by the international development community, public expenditures in the social sectors have increased from around 6 percent of GDP in the early 1980s to 16 percent by 2001. Nevertheless, the resulting reduction in poverty has been frustratingly small (Mercado *et al.*, 2003).

This paper will argue that the failure of the poverty reduction strategies in Bolivia arises from treating poverty as a static problem, while in reality it is a highly dynamic problem. A fifty percent poverty rate can mean two very different things. One interpretation might be that the whole population is poor half of the time; alternatively, one might conclude that 50 percent of the population is always poor, while the remainder is unlikely to become trapped in poverty. The first is a much easier kind of poverty to deal with both at the private level and at a public policy level, since poverty is transitory for each household, at least in intergenerational terms. This kind of poverty can be relieved through unemployment benefits, pension savings, borrowing, and a large set of other types of transfers aimed at smoothing consumption over the life cycle.

On the other hand, if it is the same families who are poor all the time, it is much more difficult to develop strategies to alleviate the hardship. Poor people cannot save for harder times, as all times are hard times, and they cannot borrow against higher future income because they don't expect their incomes to be any better in the future. From a social point of view, it is difficult to devise transfer mechanisms, as the transfers would always be one-way and unless the mechanism is capable of lifting the beneficiary out of poverty on a permanent basis, would need to be sustained for a lengthy period during the beneficiary's lifetime. Few people are willing to pay high taxes if they don't expect to receive any benefits from those taxes themselves, and the perverse incentives generated by non-transitory social welfare programs further limit their usefulness.

While a tremendous amount of attention has been paid to poverty and inequality during the last decade, very little attention has centered on the *dynamics* of poverty and inequality, which we will call social mobility. If social mobility is high, people move around in the income distribution from year to year and from generation to generation depending partly on their own efforts (how much they study, how hard they work, how much they save, how they invest) and partly on external factors (health, luck, changing family composition, macroeconomic conditions, etc.).

If social mobility is low, on the other hand, people are stuck at a specific place on the income distribution scale year after year and generation after generation - only an enormous amount of effort or luck can change this situation. This is not only unfair and difficult to alleviate through redistribution, it also tends to reduce the amount of effort

and investment in the country, as there is no link between effort and result. Poor people are unlikely to make the sacrifices involved in studying many years, working hard, saving, and investing, if they don't expect that effort pay off in the future. This creates a vicious circle as the expectation that effort will not return benefits will in turn prevent them from making an effort. This self-fulfilling prophesy leads to people not making an effort that could possibly improve their situation.

The few empirical studies on social mobility that have recently surfaced unanimously agree that Bolivia has very low social mobility (Behrman, Birdsall and Székely, 1998; Dahan and Gaviria, 2000; Andersen, 2001a). This implies that poverty is permanent and extremely difficult to either reduce or alleviate. In addition, low social mobility reduces incentives for growth, and since low growth reinforces low social mobility, the country is stuck in a vicious circle. Faced with this new dynamic view of Bolivia's problems, the present paper discusses what has gone wrong with previous policies, and what can be done in the future to increase social mobility and thus leave the vicious circle of low social mobility, low growth, and permanent poverty.

The paper is divided into five sections. This first section serves as an introductory overview of the work. The second section presents a revision of the theoretical and empirical work on the relationship between social mobility and development. The third section presents a short diagnosis of the macroeconomic situation that has characterized our economy over the past two decades, discussing what has been done to reduce poverty and the results obtained to date. Section four investigates the sources of the lack of social mobility in Bolivia and discusses what can be done to improve the situation. Section five provides some concluding remarks and suggests areas of future research.

2. Social Mobility and Development

2.1. Review of the Theoretical Literature

The theoretical literature on development is vast, but the ones taking into account social mobility are very few. They all arrive at the conclusion that high social mobility is associated with higher economic growth, but the transmission mechanisms between mobility and growth differ between the models.

Raut (1996) develops an endogenous growth model where the growth rate depends on the quantity and quality of technological and scientific research. In turn, the level of research depends on the talents and educational level of the researchers. Only researchers with particular talents and a minimum necessary level of education can perform research that furthers economic growth. People with an excellent education but without sufficient talent cannot contribute to economic growth. The same thing happens with very talented people lacking the necessary education. The conclusion of this model is that growth is maximized when people receive an education that corresponds to their talent. The model supposes that talents are randomly distributed among the population and that the individual level of talents is private information. Employers cannot observe the level of the employees' innate talents, which creates asymmetric information important for the functioning of the model.

Education improves the productivity of employees and it also provides clues to their individual talent levels. Raut's model presumes that achieving a certain level of education is more expensive for people with lesser talent in comparison to those with more talent. Also, to introduce intergenerational relationships, the model supposes that obtaining education is less expensive for children of educated parents.

Each person chooses his or her education level by taking costs and benefits into account. The benefits are the wages that employers offer. Employers will offer higher wages for better educated people, not only because they should be more productive, but also because they should have more innate talent. The difference in wages for people with less education and people with more education depends on employers' expectations regarding the relationship between innate talents and education. If employers believe that education is a good indicator of innate talents, they will conclude that educated people are more productive. Employers' can thus offer them higher wages. On the other hand, if employers' believe that education is not a good indicator of innate talents, people with more education are not necessarily deemed more productive and thus will not be offered higher wages.

While offered wages are important for decisions on education, employers' expectations become very important for growth. If employers believe that education is a good indicator of innate talents (that the education level depends more on the innate talents than the level of parents' education), they will offer better returns to education.

As a consequence, employees will opt for more education, which will make them more productive. With more productive workers the economic growth rate will be higher.

The model generates a variety of possible equilibriums. One kind of equilibrium (*pooling equilibrium*) is that all employees choose the same education level and, therefore, all will receive the same wage. We can call this equality, but it does not produce the maximum level of possible growth. In this scenario education does not provide clues to employers about employee talent levels and productivity. As a result, employers will offer lower wages and the workers will also choose lower education levels.

There is a second equilibrium (*separating equilibrium*), where the workers will choose different education levels depending on their talents and the education of their parents. At the extreme of this second equilibrium, the education of the parents determines the education of their children. We can call this zero social mobility. This equilibrium does not generate an optimum growth level, for the reasons previously stated. A third possible equilibrium consists of all employees who have the same innate talents choosing the same education level, independent of their family background. This can be called equilibrium with equality of opportunities. Raut shows that in this case the rate of growth is higher than in the previous cases. He also shows that the case with maximum growth belongs to the group with equality of opportunities.

To move an economy from a low social mobility–low growth equilibrium to a high mobility–high growth equilibrium will require a change in the employers' self-fulfilling expectations about the importance of family background compared to the importance of innate talents. One way of achieving this change could be a government policy targeted at making the optimal education available for all children independent of their family background. This, in turn, requires a wide range of policy initiatives, ranging from pre-natal care to college loans.

Galor and Tsiddon (1997) also explore the links between technological progress, wage inequality, social mobility and growth, and develop a model that creates cyclical patterns in all four variables. The model assumes that there are two factors that determine earnings: the individual's innate ability and parental human capital. In periods of major inventions, innate ability becomes relatively more important, while the relative importance of family background diminishes. This means higher social

mobility, but also higher wage inequality because of a higher concentration of high-ability, better-educated individuals in technologically advanced sectors. This concentration of human capital in technologically advanced sectors would stimulate further inventions and future output growth. In subsequent periods, when the new technologies become more accessible to the rest of society, parental human capital will become relatively more important again, thus decreasing earnings mobility and decreasing inequality while making the latter more persistent. The model has the unlikely implication that userfriendliness – placing technological advances within the reach of most members of society - is bad for growth.

The analysis suggests that earnings mobility governs the pace of technological progress and output growth, while technological progress determines the degree of wage inequality and intergenerational earnings mobility. One of the conclusions of the paper is that social impediments to earnings mobility may distort the allocation of talent across occupations, thus reducing the pace of new inventions and output growth.

The links between growth and social mobility are also explored in a study by Hassler and Rodriguez Mora (2000). The model includes two types of individuals: workers and entrepreneurs. Entrepreneurs are the ones that generate new ideas and new technologies and make the economy grow. The more intelligent the entrepreneurs the higher the growth rate of the economy. Intelligence is randomly distributed among all people. With low social mobility the current generation of entrepreneurs mainly consists of the children of the previous generation of entrepreneurs. From an intellectual point of view, they are a random sample of society's entire population, and consequently, they have average levels of intelligence. The entrepreneurs are therefore not particularly innovative, and they do not change the world substantially. The entrepreneurs do, however, confront economic challenges, and they learn from these and pass this knowledge on to their children. This is sufficient to give the children of entrepreneurs the slight advantage that will make them the entrepreneurs of the next generation. Consequently, the intelligence of entrepreneurs in an economy with low social mobility will remain at an average level, and the economy will grow only moderately.

In an economy with high social mobility, on the other hand, the entrepreneurial class is formed by the most intelligent people irrespective of their family background. Since

the entrepreneurs are very intelligent they can generate a great deal of technological change and rapid growth. They thus make the world change rapidly, and the experience that they can pass on to their children depreciates so quickly that it is of little or no value. The next generation of entrepreneurs will thus be formed by intellectually gifted people rather than necessarily the children of entrepreneurs, since the children of entrepreneurs have no particular advantage in a rapidly changing world. This implies that the economy with high social mobility will enjoy consistently higher growth.

Several other papers show how the allocation of talent in an economy is important for the level of growth. Murphy, Shleifer, and Vishny (1991), for example, show that when talented people are attracted to the productive sector, they create high growth, but if they instead are attracted to rent seeking activities, they create stagnation. Their model has an interesting implication regarding discrimination in a country where rent seeking is the most lucrative sector (which could be the case in Bolivia[1]). If talented people are attracted to the rent seeking sector because it offers the highest returns, then discrimination may actually cause higher growth. This is the case if a dominant group monopolizes access to the rent seeking sector, because then the more intelligent people from the excluded population will have to work in the productive sector and thus some growth is generated.

In a related paper, Baumol (1990) argues that while it may be difficult for economic policy to affect the supply and quality of entrepreneurs, it may be possible to affect the allocation of entrepreneurship between productive and unproductive sectors, such as rent seeking and organized crime.

Hassler, Rodriguez Mora and Zeira (2002) develop a model where social mobility and wage inequality is determined simultaneously and endogenously. In this model they show that wage inequality has two opposing effects on upward social mobility: the *incentive effect* and the *distance effect*. When future wage inequality is expected to be high, this provides an incentive for investment in education, which increases upward mobility. However, high wage inequality also reduces the possibility for the poorest segments of the population to invest in education, thus decreasing their upward

1 Transparency International, a global coalition against corruption, monitors corruption perceptions around the world. According to their most recent figures (2003), Bolivia is 106th out of 133 countries investigated (www.transparency.org) ranked with lesser corrupt nations at the top of the list. This is a relative improvement over the country's assessment in 1997, where Bolivia was found to be the second most corrupt country in the world.

mobility. This second and opposing effect is called the distance effect. This undesirable effect can be partially counteracted by public investment in education, but the model also shows that educated parents are likely to be better at taking advantage of general public education, implying that public education expenditure may increase inequality of opportunity over time rather than decrease it.

The implication of the above mentioned studies is that to achieve optimum growth it is important that people get the education that correspond to their innate talents and then gain access to work in sectors where they are most productive. This requires that young people's educational and occupational choices be determined by talent and not limited by family background, or in other words, high growth requires a high degree of social mobility. In addition, it is important that there is a certain amount of wage inequality in the society in order to provide incentives for investment in education. On the other hand, inequality should not be too high, because that would prevent poor people from investing in education for their children.

High social mobility is not a sufficient condition for high growth. It also requires that productive activities yield higher returns to talent than unproductive rent seeking activities. If talent is attracted to rent seeking activities rather than productive activities, then growth will be limited irrespective of the degree of social mobility present in the society.

2.2. Review of the Empirical Literature

There have been three important attempts at estimating social mobility in Bolivia and comparing it with social mobility in other Latin American countries (Behrman, Birdsall and Székely, 1998; Dahan and Gaviria, 2000; and Andersen, 2001*a*). All three studies use standard household surveys, since there are no panel data sets available that cover the same families in Bolivia over time.

The basic idea behind all three studies is to measure how important family background is in determining the educational outcomes of young people. If family background is important in determining young peoples' educational level (and through that future income levels) social mobility is considered low. If family background is unimportant, social mobility is high.

Behrman, Birdsall and Székely (1998) and Andersen (2001*a*) measure the influence of family background directly in regressions with schooling gaps as the dependent variable and family background variables as explaining variables. Schooling gaps reflect missing years of education under the assumption that all children should start in school at age 6 (or in some countries 7) and advance one grade each year until they are 19 years old. Grade repetition and school drop out generates schooling gaps, which are presumed to be negatively correlated with future income earning capacity. Dahan and Gaviria (2000) measure the influence of family background indirectly by calculating the correlation of schooling gaps between siblings.

The advantage of the Dahan and Gaviria social mobility index is that it does not require the *a priori* definition of what family attributes are important (e.g. mother's education, family wealth, parental attitudes, etc.) Their index controls for all influences that are common to all children in the same family. The disadvantage is that at least two siblings in the relevant age range are needed for each family. This implies a dramatic reduction in the sample of young people. Worse, the ones that are left out are unlikely to be similar to those that are included in the analysis, since teenagers with many siblings are much more likely to be included.

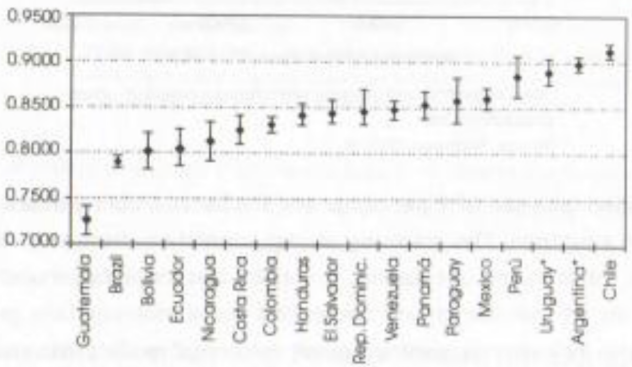
Andersen (2001*a*) provides some refinements and improvements to the method proposed in Behrman, Birdsall and Székely (1998). First, the method for determining the importance of family background (Fields' decomposition (see Fields, 1996)) is scale-independent, so results do not depend on, for example, the currency in which income is measured. This allows for easy comparison across countries and regions. Second, the method does not require a provision of weights for the different family background variables. Third, the method allows single parent households to be included in the analysis, because the maximum of mother's and father's years of education is used rather than both at the same time. Fourth, Andersen (2001*a*) provides confidence intervals for all social mobility estimates, so that the reader can see whether different measures are actually statistically different. Fifth, in the case of Bolivia, Andersen (2001*a*) provides national estimates, while Behrman, Birdsall and Székely (1998) only include urban Bolivia.

Since Andersen (2001*a*) is the only study that reports confidence intervals on the social mobility estimates, the current paper uses these estimates. The index is defined

as one minus the importance of family background, implying that higher values of the index are associated with higher social mobility. Family background is proxied by the maximum number of years of education of the mother and the father and average adult *per capita* income in the household, and the importance of these two variables is measured by the Fields' decomposition (see Fields, 1996). Figure 1 shows the social mobility estimates for 18 countries in Latin America.

The Figure suggests that Bolivia is among the least socially mobile countries in Latin America together with Guatemala, Brazil, Ecuador, and Nicaragua. Chile, Argentina, Uruguay, and Peru, on the other hand, are among the most socially mobile countries in Latin America. The social mobility estimates for Uruguay and Argentina are based on urban samples only, but these two countries are so highly urbanized (> 80 per cent) that this is almost representative for the whole country.

Figure 1: Social Mobility Index for Teenagers (age 13-19), circa 1997



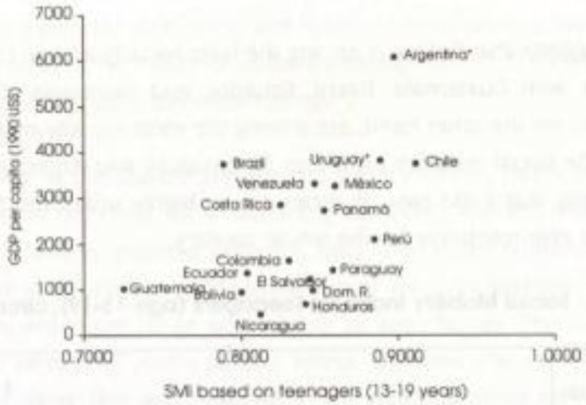
Source: Authors' elaboration based on Andersen (2001a).
Note: * Based on urban samples only.

The widths of the confidence intervals reflect the sample sizes used to estimate the index. The estimate for Brazil is based on 11,761 teenagers, which implies a relatively precise estimate. The estimate for Peru is based on only 2,800 teenagers, which implies a much wider confidence interval.

Andersen (2001*a*) finds a relatively strong positive correlation between Social Mobility and GDP *per capita* across 18 countries in Latin America, thus lending some empirical evidence to the theoretical arguments presented above.

Figure 2 suggests that Argentina[2], Chile, and Uruguay are located in high growth – high social mobility equilibrium, while Guatemala, Bolivia, Nicaragua, and Colombia are stuck in low growth – low social mobility equilibrium (assuming that the higher *per capita* GDPs are caused by higher long term growth rates).

Figure 2: Social Mobility and GDP *per capita*



Note: Argentina and Uruguay estimates are based on urban populations only.
Source: Andersen (2001a).

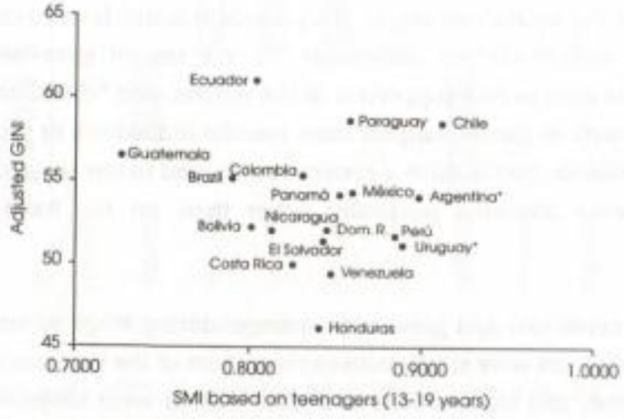
The correlation between GDP *per capita* and the Social Mobility Index is 0.53 across Latin American countries. The relatively strong correlation, however, does not imply anything about the direction of causality. It may be that low social mobility causes low growth, or it may be that low growth causes low social mobility. Low growth and low mobility may also be jointly determined as the theoretical models discussed above have explored.

Figure 3 shows that there is only a very weak or no correlation between social mobility and income inequality ($\rho = -0.12$). This corresponds to the theoretical review, which suggests that there is not necessarily any relationship between the two. Guatemala, Ecuador, Brazil, and Bolivia all have low social mobility and high income inequality. In these countries there is a large gap between rich and poor and there is little chance of crossing that gap. Chile, Paraguay, and Argentina also have high income

2 This was measured prior to the Argentinian economic collapse - the GDP per capita figures were inflated by the artificial exchange rate.

gaps between rich and poor, but the chance of crossing the gap is substantially higher. This implies that the incentive structure in these countries is much better.

Figure 3: Social Mobility and Income Inequality



Source: Andersen (2001a).
Notes: Argentina and Uruguay estimates are based on urban populations only. The GINI coefficients are from Székely and Hilgert (1999), and they are adjusted to be reasonably comparable across countries.

While low mobility and high income inequality is clearly the worst combination, high mobility and low income inequality is not necessarily the best. There has to be a certain amount of inequality to provide incentives for people to study hard, work hard, be innovative, and take risks.

3. Macroeconomic Context and Poverty Reduction Efforts

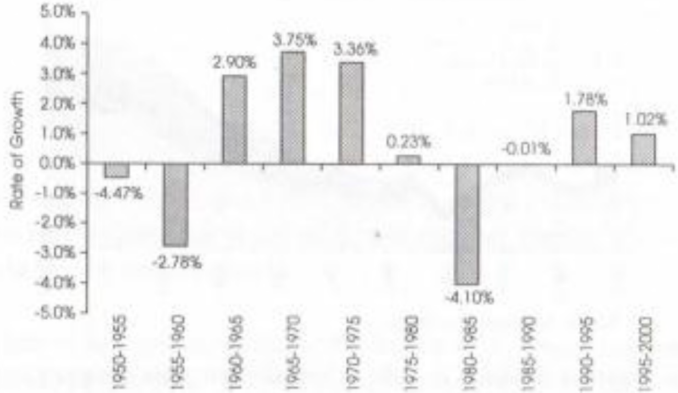
The low social mobility in Bolivia is to a large extent historically determined. Before the 1952 revolution, the Bolivian economy essentially relied on the production of tin, an industry composed of three major private firms –Patiño, Hochschild and Aramayo Trading Co.– which, by providing around 2/3 of the state's revenues, exerted extraordinary political and economic influence. At the same time, the agricultural system was based on large land holdings in the hands of a few, with an archaic quasi-feudal production structure with extremely low productivity (Kaufman, Mastruzzi and Zavaleta, 2003). Wealth was concentrated in relatively few families with enormous economic and political influence to secure that public policies were working in their interests.

The violent revolution in 1952 brought to power the National Revolutionary Movement (MNR) whose ideology consisted of overthrowing the mining-landlords oligarchy and creating a national state based on "state capitalism." The mines were nationalized and land reforms were carried out. With the growing role of the state in the operations of the productive sector, the political realities favored the development of an elaborate system of "job patronage", i.e. the use of state-owned-enterprises (SOEs) as political tools to hire supporters of the regime, and "clientilism" – the use of SOE public contracts to garner support from specific individuals or groups (Kaufman, Mastruzzi and Zavaleta, 2003). Such a system contributed to low social mobility, as jobs and contracts were allocated politically rather than on the basis of merit and productivity.

This system continued and grew even stronger during Hugo Bánzer's dictatorship (1971-1978) as alliances were struck between members of the business community and the military regime, and trade unions and labor classes were subjected to repressive measures. Friends of the government, particularly in the military and among the private business community, were frequently favored with property rights over hitherto public lands, mining concessions, and most importantly, subsidized credit (Morales and Sachs, 1990).

Bánzer's reign was a period of relatively high growth (see Figure 4) due to favorable commodity prices, a boom in the production of gas, and large influxes of capital financed through heavy borrowing. In 1982, when external commodity prices plummeted and external capital dried up, a series of military governments gave way to a democratically elected government. However, the new government failed to make the necessary macroeconomic adjustments and instead led the country into a hyperinflation peaking at 25,000 per cent annually in 1985. The crisis let to a dramatic reduction in output and drove a large number of firms into bankruptcy. However, during the same period, elite firms or individuals, with access to subsidized hard currency through special relations with the Central Bank could enrich themselves by reselling foreign currency in the black market at 15 times its subsidized cost (Kaufman, Mastruzzi and Zavaleta, 2003).

Figure 4: GDP *per capita* Rate of Growth – five year period



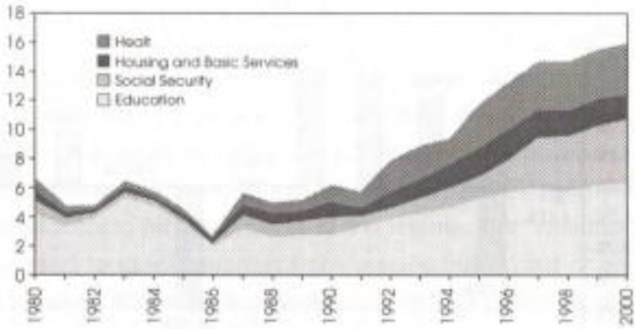
Source: Instituto Nacional de Estadística

Thus, at least until 1985, Bolivia has been characterized by an extremely unlevel playing field, where public policy benefited the rich and influential, while the poor were adversely affected and had little chance of improving their situation.

This started to change in 1985 when three times ex-president Victor Paz Estenssoro introduced the New Economic Policy (NEP) (through Supreme Decree No. 21060) which has become the axis of economic policy from that point on. The plan included a very successful stabilization package and basic economic policies in line with the Washington Consensus. The plan was later complemented by structural and social reforms, with heavy support from the international development community.

The first generation of reforms took place during the period 1989 to 1993 when the fight against poverty became more explicit, largely due to the emphasis placed on the issue by the international community. The education reform was initiated during this period, and governmental budget support to social sectors began to increase as a percentage of total outlays (see Figure 5).

Figure 5: Social Spending as % of GDP



Source: Mercado et al (2003)

With the inclusion of Bolivia in 1997 in the HIPC program designed by the Bretton Woods institutions, a new focus was given to poverty reduction strategies. According to figures prepared by CEDLA, 2003, in the following table, public investment in social sectors has increased dramatically at the expense of investment in extractive activities and infrastructure.

Table 1
Public Investment by Sectors (in percentages)

Sector	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Extractive	32.8	29.1	31.5	32.6	28.9	22.8	20.5	21.1	12.3	9.9	5.6	1.2	1.3	0.5	0.3
Productive Sectors	11.6	17	12.4	12.5	20.1	12.3	9.8	8.1	10.1	10	13.3	15.2	15.4	15.8	17.4
Infrastructure	45.3	45.2	45	36.5	42.1	49	52	45.7	42.3	39.4	36.1	35	33.4	34.8	36
Social	10.2	8.6	11.2	18.5	8.8	15.9	17.6	25.2	35.4	40.7	45.1	48.5	49.9	48.8	46.3
Health	2.0	0.8	1.4	4.9	2.6	4.2	4.7	4.7	5.0	5.3	6.0	6.9	7.8	10.4	7.7
Education	1.8	0.7	0.4	0.1	0.5	1.4	1.6	3.0	7.1	10.8	13.9	12.7	14.4	14.3	16.8
Basic Services	4.0	4.0	7.6	12.1	3.2	6.4	7.3	7.0	8.8	14.3	14.6	16.3	18.6	15.6	8.7
Housing	2.4	3.1	1.8	1.4	2.5	3.9	4.0	10.5	14.5	10.3	10.6	12.6	9.1	8.5	10.1
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Notes: As of 1992, investment from the Social Investment Fund (FIS) is included.
As of 1995, estimated investment by municipalities is included.
Source : CEDLA (2003).

It was expected that such dramatic increases in social spending and investment would be beneficial for the poor, but although coverage rates of social services have indeed increased, and some substantially so, income poverty rates have remained stubbornly high, especially in rural areas. However, there is a time lag in the transmission of the effects of greater social spending on education and changes in poverty. The same may be said for social spending on housing, health and basic services, although the time lag is less clear. Thus, it may be too early to determine whether the new emphasis on social sector spending has been or will be effective in poverty reduction for the next generation.

Due to lack of national household surveys before 1997, there is little hard statistical evidence on long term trends in income poverty, but Klasen and Thiele (2004) have recently made a bold attempt at estimating national poverty rates back to 1989 using a new methodology combining urban income surveys with national health surveys. Their results show dramatic reductions in income poverty in urban areas during the 1990s, but there appears to be a partial reversal during 2000-2002. In rural areas there was a moderate reduction in poverty during the 1990s, but an almost complete reversal during the first years of this decade (see Table 2).

Table 2
Poverty Trends using Moderate Poverty Line*

	1989 Simulated	1994 Simulated	1999 Observed	2002 Observed
Capital Cities	63.8	58.9	51.1	55.2
Towns	81.8	73.0	69.1	67.9
Rural	88.6	90.0	83.4	87.3
Total	74.8	72.8	65.2	68.5

*The moderate poverty line is, in line with standard practice in Bolivia, applied to income in urban areas, and consumption in rural areas (as income data are considered not to be reliable there and consumption data are not available for the urban household surveys prior to 1997).
Source: Klasen and Thiele (2004). Preliminary.

The second generation of reforms occurred over the period 1994 to 1997, focusing on transforming the role of the State in the economy from that of producer to regulator and modernizing governmental institutions and frameworks. Regarding state efforts to combat poverty, the governmental decentralization reform is expected to have the most

profound impacts in the medium and long term through a system of tax income redistribution to municipalities.

In spite of nearly a decade of reforms and market liberalization, however, the composition of GDP growth has barely changed in the last 12 years (see Table 3). The continuing dependence on agricultural activities (including agriculture, animal husbandry and fish production) combined with non-renewable resource extraction leave the country highly vulnerable to adverse shocks, especially to fluctuations in international commodity prices.

Table 3
Gross Domestic Product by Economic Activity

Años	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
PIB	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture	15.4	15.5	14.4	14.6	15.2	14.9	14.2	14.9	12.6	13.3	13.0	13.3	13.0
Petroleum	4.3	3.3	2.9	2.0	0.9	1.2	1.3	2.1	1.9	2.0	3.2	3.3	3.4
Minerals	5.9	4.5	4.4	3.2	4.0	4.8	4.6	4.2	3.6	3.4	3.4	3.1	3.0
Manufacture Industry	17.0	17.7	17.1	16.9	16.7	16.7	16.4	14.5	14.0	13.6	13.2	13.3	13.1
Electricity, Gas and Water	1.6	2.0	2.6	3.2	3.4	3.4	3.0	2.7	2.8	2.9	2.9	3.0	2.9
Construction	3.1	3.1	3.1	3.4	3.1	3.0	2.6	2.9	3.8	3.3	3.0	2.8	3.1
Comercial Activities	8.9	8.8	8.3	8.2	8.5	8.4	8.2	7.9	7.7	7.4	7.2	7.2	7.1
Transport and Com.	9.3	9.9	10.5	11.1	10.8	10.1	10.4	10.9	12.0	11.8	11.3	11.5	11.9
Financial Services	10.2	10.3	10.3	10.5	10.3	9.9	10.6	11.6	12.3	14.6	13.6	13.0	12.1
Public Admin	10.1	10.2	11.0	11.5	11.5	11.1	10.9	11.2	11.8	12.0	11.7	12.4	12.4
Other Services	7.7	7.4	7.4	7.6	7.3	7.2	7.5	7.6	8.0	8.4	8.3	8.5	8.7
Imputed Banking Services	(1.6)	(1.8)	(2.2)	(2.5)	(2.6)	(2.7)	(3.0)	(4.0)	(4.4)	(4.9)	(4.5)	(4.2)	(3.8)
Taxes	8.3	9.1	10.1	10.3	10.9	12.0	13.4	13.5	13.9	12.2	13.6	12.9	13.0

Source: INE

With the resignation of Gonzalo Sanchez de Lozada in October 2003, and former Vice President Carlos Mesa assuming the presidency, the role of traditional political parties in helping Congress work with the Executive Branch on legislation has changed dramatically. The current president is not a member of any political party and has staffed his cabinet with apolitical ministers. While there is a sense that the current government is reaching out to legitimate leaders of different social sectors to redirect public policy, it is perhaps too early to determine whether the inclusion of different voices and viewpoints in the design of macroeconomic policy can bring about greater social mobility and a significant reduction in poverty.

4. Recommendations on How to Increase Social Mobility and Long Run Growth

A variety of factors affect the level of social mobility in a country. The most important factor is perhaps the education system which determines the degree of equality of opportunity for young people. A free, high quality public education system would provide relatively equal education opportunities and thus supposedly high social mobility.

The education supply in itself is not enough to increase social mobility, however, as there are many other barriers to mobility. The first arises from differences in education demand between poor and rich families. Even if the direct costs of education were completely free, there will still be indirect costs (clothing, school supplies, transport, etc.) and opportunity costs (children cannot help as much with domestic and farm work) which tend to be relatively more important for poor families. Studying may also be more difficult and require more effort for poor children as their study environments are less ideal (lack of parental support, no computers and books at home, etc). Educational quality is another factor – incentives to place the best teachers in remote rural areas are expensive and often inadequate. Bolivia has yet to become as urbanized as many neighboring countries, and the geography and difficult access to rural areas is another factor which challenges the provision of quality educational access to all regions of the country.

A second type of barrier to social mobility are found in the labor market in the form of discrimination. Discrimination essentially reduces the returns to education for the groups of people who are discriminated against, making it less likely that these groups will make the necessary education investments. If jobs are allocated more on the basis of family, political, ethnic or social ties than on the basis of merit, this would have the same negative effect on social mobility and growth.

A third barrier is found in the credit market. If people do not have access to credit at reasonable terms, they cannot make the investments necessary to improve their lives in the future. Bolivia is considered a pioneer in the microcredit market along with Bangladesh, and this financial sector appears to have weathered the ongoing economic crisis better than the traditional banking sector. In a relevant study of the poverty

alleviation effects of microcredit in Bolivia (Navajas, 2000), the authors find that microcredit in Bolivia appears to serve not the very poorest but rather those on the upper edge of the poverty line. In addition, microcredit apparently serves more to smooth consumption rather than to increase incomes. It is to be expected, given the resistance of this financial service sector to the economic downturn in the country, that microcredit will continue to expand throughout the country and consolidate market share in the near future. As consumption smoothing is important to ameliorate the opportunity costs of children attending school and thus reducing schooling gaps, access to microcredit may have important and measurable effects on social mobility in future generations.

A fourth barrier is related to the marriage market. If people marry almost exclusively within their own social class, such marriage customs would tend to reduce social mobility. On the other hand, if people marry across social and economic classes, this would have a positive effect on social mobility and at the same time reduce inequality.

It has also been shown that the degree of urbanization has an impact on social mobility, with highly urbanized countries enjoying more social mobility, and urban people typically being more socially mobile than rural people. This can be partly explained by the easier access to education in urban areas, but probably also by the wider range of work opportunities found in urban areas. Finally, high fertility rates, with the associated high dependency burdens, may also be an obstacle to social mobility.

Below, we will explore the importance of some of these factors in the case of Bolivia and use the results to develop an agenda of policies for improving social mobility.

4.1 The Education System

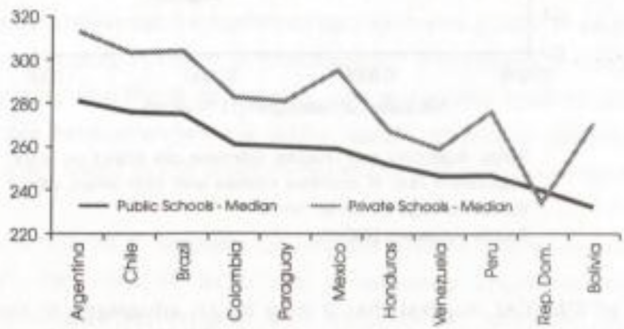
A free education system of high quality would seem the obvious way of improving social mobility. Theoretically, any child could then get the education he or she wanted, independently of his or her family background. However, the child's idea of the ideal education may still depend on family background, so social mobility would not necessarily be perfect.

The education system in Bolivia is very far from the target of being free and of uniformly high quality. Although close to 95 per cent of 7-13 year olds attend school,

most of them benefit little from the education in terms of future earnings, and many do not even learn the basic skills they are required to learn.

Bolivian students, especially those in public schools, score very low on academic aptitude tests compared to students from other Latin American countries and the gap between public and private school students is among the highest in the region (see Figure 6). This is a serious impediment for social mobility, since the poor who cannot afford private education, end up with an education that is substantially inferior to that of their richer counterparts, and this disadvantage is likely to carry through their entire lives and through the lives of their children too.

Figure 6: Average Scores on 4th Grade Language Test in 11 Latin American Countries, Public and Private Schools, 1997



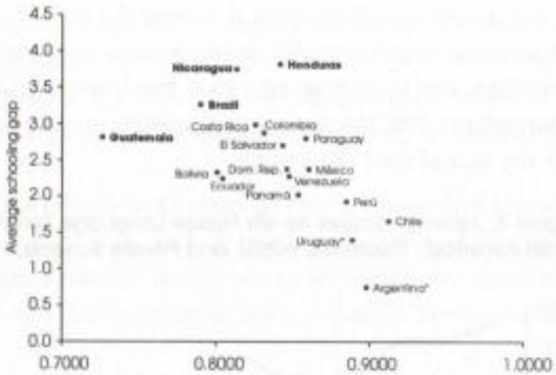
Source: UNESCO (1998)

Bolivia has created a system of measurement of education quality (SIMECAL) to understand the magnitude and causes of the problems in the education system. Children are tested regularly and results compared with personal and school characteristics. Results indicate that an important reason for low and insufficient achievement is missing initial education or late school start.

The importance of early school start is supported by the findings in Andersen (2001*a*), which show that, across Latin American countries, the countries where children start school at age seven instead of age six (i.e. Guatemala, Brazil, Nicaragua, and Honduras), are among the countries with the largest schooling gaps and the lowest social mobility (see Figure 7). The correlation across Latin American countries between

school start age and social mobility is -0.54, and the correlation between school starting age and teenage schooling gaps is 0.66, indicating that it is an advantage to send children to school at age six rather than seven.

Figure 7: Social Mobility and Schooling Gaps



Notes: Argentina and Uruguay estimates are based on urban populations only. In countries marked with bold letters, official school start age is 7 rather than 6.
Source: Andersen (2001a).

The results of SIMECAL suggest that it may be an advantage to send children to school even earlier than age six. Most rich families in Bolivia already send their children to pre-school around age three, implying that these children develop a firm habit of going to school, a habit of studying and learning, which will improve their grades and make it unlikely that they drop out of school prematurely. The children who have attended pre-school have a three or four year advantage over the poor children that are not allowed to enter the public education system until after their sixth birthday. In rural Bolivia, many children delay starting school until they are seven or eight (Urquiola 2000). This is too late an age to establish a solid habit of studying, and the probability that these late starters will drop out early is very high.

This suggests two necessary initiatives for Bolivian policy makers. First, they should offer pre-school facilities in public schools. Second, they should make sure that children do not start school too late.

4.2. Discrimination

Discrimination may be defined as unfair treatment of one person over another based on factors unrelated to their productivity. In Bolivia, there are many factors that are used to discriminate. Women, for example, typically earn about 25 per cent less than men even if they have the same level of education and occupy similar positions (Mercado, Andersen and Muriel, 2003). Such gender based discrimination may be partly explained by the higher probability of shorter or more prolonged absences among women due to child bearing and rearing, but it would still tend to reduce the incentives for women to invest in education.

Ethnicity is also a common ground for discrimination. Although a recent study by Mercado, Andersen and Muriel (2003) show that most of the wage discrimination against indigenous people can be explained by their lower *quality* of education, this will still reduce the incentives to invest in education for any individual indigenous person, as education quality is difficult to observe, and employers tend to just assume that indigenous people have attended low quality public schools in rural areas. A person would have to really stand out in order to overcome that basic assumption.

In the public sector, which accounts for the gross share of total salary income in Bolivia, there is another discrimination factor that is extremely important –namely political affiliation. Jobs at all levels ranging from ministers to chauffeurs, especially in the government, are allocated based on party affiliation or family connections. Even teaching posts, which are clearly not the most attractive public sector positions, are distributed more on the basis of political affiliations than professional qualifications. In positions with more power (especially to extract rents) this unfortunate situation is even more pronounced, with 75 per cent of all positions in the Internal Revenue Service being allocated on political grounds. The same holds for the Customs Agency. Outright purchasing of attractive public positions is also quite common (Kaufman, Mastruzzi and Zavaleta, 2003).

When public sector jobs are allocated more on the basis of gender, ethnicity, political affiliation, family connections or capacity to pay bribes than on merits and productivity, this not only dramatically reduces productivity, but also obstructs social mobility. Girls born in rural areas to poor, indigenous parents will face severe constraints in the labor market no matter how talented and well-educated they might be. With such a massive

handicap, it is no wonder if her parents find that investment in her education is likely to be a bad investment, and her fate is essentially determined from birth.

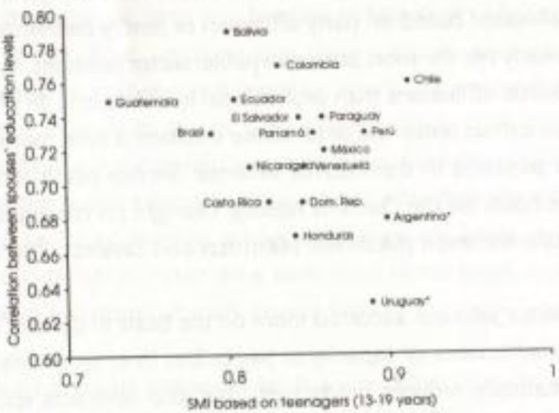
4.3. The Marriage Market

The marriage market can work either to increase or to decrease social mobility, depending on the degree of cross social sector marriages in the country. If people tend to marry only people from their own class, then social mobility is restrained by marriage customs. If, on the other hand, people often marry outside their class, then social mobility is promoted by the marriage market. In addition, inequality will be lower, since resources are spread out more evenly across households.

A simple measure of the degree of cross social sector marriages is the correlation between spouses' education levels, ρ_m. This correlation is generally high in Latin America –ranging from 0.67 in Costa Rica to 0.79 in Bolivia. The corresponding figure for the United States in 1990 is 0.62 (Kremer, 1996). The higher the correlation, the lower the contribution to social mobility.

In Bolivia, the marriage market contributes to low social mobility as the correlation between spouses' education levels is extremely high (see Figure 8).

Figure 8: Social Mobility and Cross Social Sector Marriages



Note: Argentina and Uruguay estimates are based on urban populations only.
Source: Andersen (2001a).

While a low degree of cross social sector marriages has a negative impact on equality and lowers social mobility, the situation also has a positive side. Becker (1991) argues that parents have a greater incentive to invest in their childrens' education if this increases the child's chance of marrying a desirable spouse. Kremer (1996) finds that an increase in r_m from 0.6 to 0.8 will increase the returns to investment in education by 12.5 percent. In effect, imperfectly assortative marriage can be seen as a tax on parents' investment in their children, with the proceeds going to the children-in-law (Kremer, 1996).

The segmentation of marriage markets is also highly evident in the ethnic dimension. Table 4 shows that only 8 per cent of all couples are mixed indigenous/non-indigenous while the remaining 92 per cent find partners within their own ethnic group. In the group of mixed couples, the indigenous person tend to be better educated, and relatively well-off compared to the indigenous persons in non-mixed marriages, whereas the non-indigenous persons tend to have less education and less income than their non-indigenous counterparts in non-mixed marriages. This is an indication that in the few cases were we do observe ethnic mixing, it is only at the border – the "most attractive" indigenous persons marrying the "least attractive" non-indigenous persons.

Table 4
Classification of Couples

	Type I Indigenous/ Indigenous	Type II Indigenous/ Non-indigenous	Type III Non indigenous/ Non-indigenous	Total
Frequency	3292	640	4061	7993
Percentage	41.19	8.01	50.81	100.00

Source: Authors' elaboration based on MECOVI survey data (1999-2002).

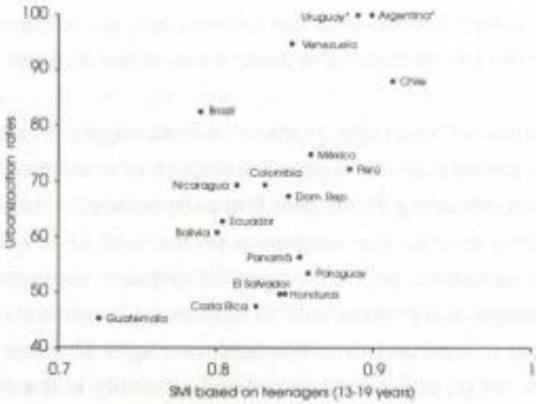
While it is clear that the marriage customs in Bolivia contribute to low social mobility, public policy cannot do much to change this situation.

4.4. Urbanization

There is a tendency for highly urbanized countries to have higher social mobility than less urbanized countries, probably because it is easier for the governments to provide better quality education to everyone if the children are clustered together in

urban centers. Figure 9 shows the relationship between urbanization rates and social mobility, with Argentina and Uruguay having 100 per cent urbanization rates as the samples are solely from urban populations.

Figure 9: Social Mobility and Urbanization Rates



Note: Argentina and Uruguay estimates are based on urban populations only.
Source: Andersen (2001a).

The positive relationship between urbanization rates and social mobility ($\rho = 0.55$) leads us to suspect that urban teenagers might be more socially mobile than rural teenagers. This is indeed the case in Bolivia where the SMI index is 0.8841 for urban teenagers and only 0.8239 for rural teenagers. The difference is statistically significant at the 5 percent level.

The evidence presented on the relationship between urbanization and social mobility suggests one additional reason for encouraging rural-urban migration in Bolivia. It is much cheaper for the government to provide good quality schooling when students are gathered in urban centers to take advantage of economies of scale.

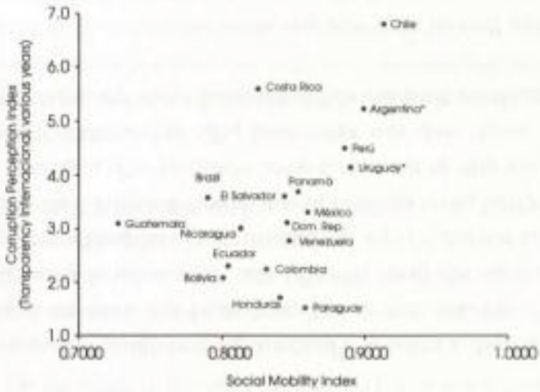
4.5 Corruption

Corruption has important effects on social mobility, especially when it implies that jobs are not allocated based on productivity considerations but rather on political or family ties. In such a labor market, the persons whose families are not well connected

will have less access to certain jobs regardless of their qualifications, and their social mobility is thus reduced.

It is difficult to measure these job-matching imperfections, but Figure 10 shows that the more general Corruption Perception Index from *Transparency International* also is highly correlated with our Social Mobility Index. Notice that the scale is inverted so that higher CPI scores imply less corruption.

Figure 10: Social Mobility and Corruption



Note: Argentina and Uruguay estimates are based on urban populations only.
Source: Mercado et al. (2003).

A more detailed survey[3] concerning different kinds of corruption in different institutions, show that there is large variation in corruption across institutions in Bolivia. The Central Bank, the Ombudsman and the Constitutional Tribune, for example, score high on transparency and service delivery performance and low on bribery and politicization. The police force in Santa Cruz, on the other hand, scores very low on transparency and service delivery performance, and very high on bribery. The Customs Department, Tax Department, and High Court in Santa Cruz are also reported with high levels of bribery and low performance, while the corresponding institutions in other regions are doing somewhat better. Some of the highest levels of politicization are found in La Paz, in the Municipal Government, in the Prefecture, and in the National Customs.

3 A Survey of Public Officials (more than 1200 public officials working on over 100 different institutions) carried out by the World Bank. Results reported in Kaufmann, Mehrez and Gurgur (2001).

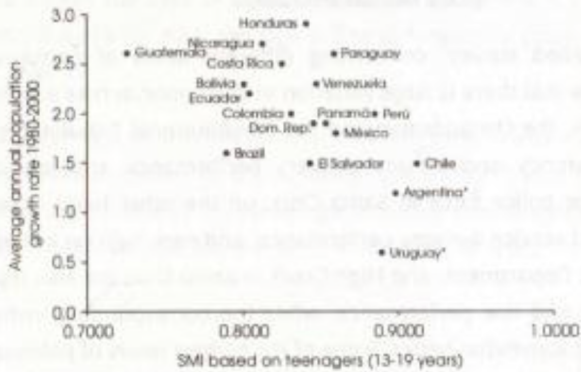
Service delivery performance does not at all seem to be related to wage satisfaction within the institutions. The public officials in the Central Bank score very low on wage satisfaction, while those in the Tax Department and High Court of Santa Cruz score quite high.

4.6 Population growth

Figure 11 shows that the negative correlation between population growth rates and social mobility is relatively strong ($\rho = -0.54$) and Bolivia is located in the "bad" end with high population growth rates and low social mobility.

The strong correlation does not imply anything about causality, but it seems logical that high fertility rates, with the associated high dependency burdens, may be an obstacle to social mobility. At the macro-level, countries with high fertility rates will have difficulties in supplying basic services to the rapidly growing population, and the ones left without services are likely to be the poorest and most marginalized groups. For poor families, many children will likely to imply less investment in each child due to a tight budget constraint, whereas this is not necessarily the case for richer families. This implies that high fertility is more of a problem for poor families and thus tend to reduce social mobility.

Figure 11: Social Mobility and Population Growth Rates



Note: Argentina and Uruguay estimates are based on urban populations only.
Source: Author's elaboration. Population growth rates from www.worldbank.org.

4.7 How to Increase Social Mobility in Bolivia

After revising both the theoretical and empirical literature on social mobility and investigating social mobility in Bolivia in particular, a number of policy recommendations can be extracted. We have divided them below under two main headings: education and corruption.

Education

The education system is fundamental for achieving greater social mobility, and although the improvement of the public education system has been high on the agenda in Bolivia for at least a decade, the recommendations arising from the present analysis differ in important aspects.

Traditionally, the main purpose of public investment in education has been to increase the general level of education in the country. For us, however, the main purpose is to create equality of opportunity and thus increase social mobility. The distinction is important because general increases in education levels will not necessarily have a positive effect on average productivity and earnings. While investment in education is clearly important for earnings at the individual level, this is not necessarily the case at the macro level. A famous World Bank study even found a significantly negative effect of public education spending on economic growth (Pritchett, 1996) and listed the following three arguments to explain how this can be possible.

First, education may work purely as a signalling device, in which case you would find a positive benefit of education at the individual level, not because education has improved the individual's productivity, but because education is a signal for innate talents. In this case, education will have no impact on growth at the macro-level, because it has not contributed to an increase in productivity. Indeed it may even decrease productivity as people are spending several years on unproductive studies rather than working.

Second, marginal returns to education fall rapidly if demand for education is stagnant. In a very static society where the skill demand of employers do not change much over time, an increase in the general level of education may not translate into higher wages. It is quite possible that all jobs are occupied by the same people, with the

same productivity, but all with two more years of education. In such a situation, higher education will not translate into higher incomes and higher growth. Even though well-educated people earn higher salaries now than lesser educated people, this in no way implies that if everyone had more education, everyone would be earning higher salaries. Quite the contrary, a rapid increase in education levels might result in more educated people being unemployed, because demand is not increasing as fast as supply.

Third, there may be perverse incentives causing people to educate themselves for counter-productive activities (bloated bureaucracy, rent-seeking activities, etc.). In this case education will prove to be beneficial at the private level, but not at the national level, as educated people would tend to engage in anti-social activities (*e.g.*, corruption).

This suggests that the aim of the public education system should not be just to give more education universally, but rather to ensure that all children receive an education that corresponds to and reinforces their innate talents and interests, thus providing that they can be as productive as possible in the future.

Since talents, interests and learning styles differ greatly from child to child, this requires a very flexible education system. The objective of the education system should be to help each child identify their talents and help them develop those talents, rather than just putting each and every child through the same standardized 12-year curriculum. It is important to develop the uniqueness in each person, as this is what pays in the labor market. Those who have unusual skills demand much higher salaries than those who have the most common combination of skills.

Thus, we do not necessarily need more education, and we certainly do not need equality in education. What we need is that all people have access to individualized education that corresponds to their innate abilities and interests, so that they can become as productive as possible in their future work lives. This requires a completely different approach than the typical universal primary education strategy.

The longer that people remain in the education system, the greater the possibilities to differentiate. However, the traditional focus on universal primary education means that the labor market receives a large number of people with average and very similar qualifications, which is going to help neither the employers nor the employees much.

An individualized education system can take many forms, but it will always involve more options for the students. For example, children (together with their parents) should be able to choose which languages they want to learn and at which age, and they should be able to choose between abstract and more practical courses. For topics that are considered essential for all (such as math) they should be able to choose between basic and advanced levels, so that the students who choose the advanced level learn the topic in more depth as necessary for continued studies or work with heavy focus on that area, while children choosing the basic level learn sufficient material for everyday life.

A more flexible learning environment is likely to reduce both drop-out rates and repetition rates, as children spend more time on the topics they enjoy and less time on topics they dislike. This will not only save money, but it will also save the children from experiences that can be very damaging for their self-esteem, and thus for their future income earning capacity. It is also important that children get introduced to the education system at an early age, to take advantage of their natural curiosity and desire to learn and to establish good studying habits.

More options for the students obviously mean more complications for the teachers and administrators. In small, rural schools where one or two teachers are responsible for all the classes, it will obviously be difficult to supply several different foreign languages and all imaginable topics at high level. However, these small schools have the advantage of teachers knowing each child better and thus better able to adjust to individual needs. In addition, the technological advances in the areas of telecommunication, computation, and virtual education are rapidly making flexibilization easier and cheaper.

A better education system yielding higher returns to education is likely to have the additional benefit of reduced fertility, which was shown to be associated with higher social mobility. Fertility can of course also be affected directly by providing better access to and information about effective family planning methods.

Corruption and Rent-Seeking

The possibility of corruption and other privately profitable but socially damaging activities seriously reduce the possible benefits of higher social mobility. Equality of

opportunity is no advantage if everyone wants to engage in rent seeking activities instead of productive activities that help generate sustainable growth in the long run.

Due to the weakness of the private sector to generate gainful employment in Bolivia, public sector jobs are very attractive, and politicians use these sought-after jobs to buy favors, return favors and secure political support, largely disregarding considerations concerning qualifications and productivity. This not only hurts overall productivity, but also social mobility. People's effort and qualifications should determine their job possibilities, not their family background and political connections.

The malfunctioning of large parts of the public service sector due to politicization and clientilism is widely acknowledged and large and expensive efforts have been launched to improve the situation. In 1992, a civil service reform program was initiated to create a corps of technically competent and motivated public employees that would not be forced out with every change of ministers. The aim was to create a critical mass of around 2,500 employees, yet by 1997, less than 250 positions had been included in this categorization, and this number decreased to only 30 by 1998 due to extremely low retention rates, so the program lost credibility and stopped (Kaufman, Mastruzzi and Zavaleta, 2003).

Institutional strengthening remains one of the top priorities for the international development community in Bolivia. Between 1998 and 2002, the international cooperation partners spent more than $400 million on this topic, corresponding to 15 per cent of total outlays — more than they devoted to education and health together. Despite the great emphasis and large amount of funds devoted to institutional strengthening, results have been very disappointing. Since the launch of the new program of institutional reform (PRI) in the year 2000, only about 2,000 public positions have been institutionalized, compared to the 42,417[4] public positions listed in the national public servants registry. It is also discouraging to note that only 26.5 per cent of public servants declare that they have entered the institution in a public competitive process (Andersen and Evia, 2003).

4 This figure comprises the central administration, decentralized institutions of departmental administrations, municipal governments, judiciary power, legislative power, electoral court, and the administrative staff of the health and education sector. It does not include the rural and public teachers, administrative staff and professors of public universities, police, army, and the foreign service.

It is not only illegal activities, such as corruption and direct robbery, which distort the incentives and obstructs the correct functioning of the economy. Many legal activities also skew incentives against sustainable productive activities. One example is foreign aid, which contributes close to 10 per cent of Bolivia's GDP through thousands of short and medium term projects. Many of these projects have no permanent impact, and attract human and financial resources away from other, possibly more sustainable and productive, activities (see Andersen and Evia, 2003). Another example is the abundance of natural resources, which tempts the country to rely on the exploitation of non-renewable resources instead of producing goods and services in a sustainable manner.

The small size of the domestic market coupled with the country's lack of sovereign coastal access are two exogenous factors limiting growth of the productive sector. The task of implementing the political and institutional changes that are needed to eliminate misgovernance and reduce rent-seeking behaviour is daunting since most of these changes would go against the interests of the majority of insiders. Nevertheless, it is essential to improve the functioning of the economy. Productive activities in the private sector have to become relatively more attractive than rent-seeking activities in the public sector, and at the same time it would be desirable to make the formal sector relatively more attractive than the informal sector. This implies a range of initiatives ranging from the reduction of public sector salaries (already in progress) to the provision of public services for the private productive sector (typically infrastructure and technical education).

5. Conclusions

This paper has shown that despite decades of concerted national and international efforts to reduce poverty, Bolivia still has some of the highest poverty rates in Latin America, with virtually no improvement in the very poor rural areas. Although Bolivia has meticulously followed the recommendations of the Washington consensus at the same time as external aid has been generous and foreign direct investment has boomed, average productivity and incomes remain at the same low level as they were both 20 and 50 years ago.

The paper argues that the failure of previous development policies is due to a lack of social mobility in the country. Without social mobility, there is little incentive for

people to invest in human and physical capital, and without investment there cannot be productivity growth. In addition, the lack of social mobility implies an inefficient use of human capital, and it hinders the construction of efficient social mechanisms of redistribution and consumption smoothing over the life-cycle.

Efforts to improve social mobility in Bolivia should concentrate on the public education system and the elimination of corruption and misgovernance. Social mobility may also be increased through improvements in the functioning of credit markets and through improved family planning services.

While we do not necessarily need more education or more equality in education, we do need a better and more flexible education system that is capable of supplying an individualized education appropriate to the talents and interests of each child, independently of family background. The education system should help each child identify their unique talents and secure them the possibility of developing those talents, so that each person can become as productive as possible during their future work life. In this way the human capital in the society can be used more optimally, thus permitting higher growth rates.

While high growth requires high social mobility, this is not a sufficient condition. It is also required that productive activities yield higher returns to talent than to unproductive rent seeking activities. If talent is attracted to rent seeking activities rather than productive activities, then no amount of social mobility can generate growth. It is therefore a very high priority that corruption be reduced so that productive activities become attractive.

Future Research

There are two main directions in which the work on social mobility could be extended and improved. The first is to add a time dimension to the social mobility index in order to test the hypothesis that social mobility has improved in Bolivia during the last couple of decades. Having several observations of the social mobility index over time would also help establish the level of confidence we should have in this measure. If it varies wildly from year to year, it is clearly not a very useful measure, whereas it would be interesting to determine whether there is a clear trend over time. A time series

would also permit testing the causality hypotheses presented in this paper, to determine the direction of influence between related events.

The second direction of improvement would be to take into account differences in education quality in order to reduce the systematic biases that the omission of this causes in the estimated social mobility index. The simplest way to do this would be to include a dummy for public/private education in the schooling gap regressions, but unfortunately such information is not always available. More elaborate techniques to estimate school quality for young people in Bolivia have been proposed by Andersen and Muriel (2002) and applied in Mercado, Andersen and Muriel (2003).

It is also clear that much more research is needed on effective ways to reduce corruption and public mismanagement in Bolivia. There have been some successes and many failures, and lessons should be learned from these.

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Poverty-Reducing Growth Strategy in Poor Countries*

*Rodney Schmidt***

Abstract

This paper synthesizes and develops research undertaken by participants in The North-South Institute project, "Macroeconomic policy choices for growth and poverty reduction" in low-income developing countries.[1] The project analysed the features of poverty and growth in seven poor countries of varying circumstances and proposed macroeconomic and growth policies for poverty reduction for them. The research was guided by the question: "How does poverty inform growth strategy?"

Our research provides evidence of the channels through which growth and distribution or poverty processes depend on each other and respond to policy together. We encapsulate the messages of these case studies in the following six propositions, discussed at length in the paper: i) macroeconomic stability reduces poverty; ii) land re-distribution enhances growth; iii) income poverty traps constrain growth; iv) urban-rural growth disparities drive income inequality; v) regional poverty traps resist growth; and vi) key growth policies can aggravate poverty gaps.

The propositions suggest growth policies that may be either of two types in terms of impact on growth and distribution. They have the potential to enhance both growth

* I am grateful to Tom Crowards of the Department for International Development (UK) and Professor Gerald K. Helleiner of the University of Toronto for their comments on a previous version of this paper. Remaining inadequacies are mine

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1 The project research papers are listed on the last page of this document. The papers may be obtained directly from the authors (contact information is included in the list). Shorter and non-technical versions of the papers are available from The North-South Institute website at www.nsi-ins.ca.

and distribution (win-win) or to enhance growth while aggravating income gaps or vice versa (win-lose).

Resumen•••

Este documento sintetiza y desarrolla las investigaciones realizadas por los participantes del proyecto "Opciones de política macroeconómica para el crecimiento y reducción de la pobreza", desarrollado por el North-South Institute para los países en desarrollo y de bajos ingresos.[2] El proyecto analiza las características del crecimiento y de la pobreza en siete países pobres con distintas condiciones y políticas macroeconómicas para el crecimiento y reducción de la pobreza diferentes. La investigación se enmarcó en la pregunta: "¿En qué medida la pobreza puede ayudar a encontrar la estrategia de crecimiento?"

Nuestra investigación provee evidencia de los canales a través de los cuales el crecimiento, la distribución o los procesos de pobreza dependen el uno del otro de manera conjunta a las políticas. Hemos englobado los mensajes de cada uno de los casos de estudio en las siguientes seis proposiciones discutidas a lo largo de este documento: i) la estabilidad macroeconómica reduce la pobreza; ii) la redistribución de la tierra aumenta el crecimiento; iii) las trampas de la pobreza e ingreso restringen el crecimiento; iv) las diferencias entre sectores urbanos y rurales llevan a una desigualdad del ingreso; v) las trampas regionales de la pobreza niegan el crecimiento; y vi) las principales políticas de crecimiento pueden agravar las brechas de pobreza.

Las proposiciones sugieren que las políticas de crecimiento podrían ser de dos tipos en términos del impacto sobre la distribución y el crecimiento. Ellas tienen el potencial de, o bien aumentar tanto el crecimiento como la distribución (win-win), o bien incrementar sólo el crecimiento mientras empeora la brecha del ingreso y viceversa (win-lose).

••• La traducción del resumen al español es responsabilidad de los editores de la Revista Latinoamericana de Desarrollo Económico.

2 Los documentos de investigación del proyecto están listados en la última página de este documento, los mismos que pueden ser obtenidos directamente de los autores (las direcciones se incluyen en la lista). Versiones resumidas y no técnicas de los documentos están disponibles en el North-South Institute: www.nsi.ins.ca

1. Introduction

Deep poverty appears everywhere, in both rich industrialized and poor agricultural countries. Poverty in poor countries is widespread, though, reaching up to 70 percent of the population. It is so pervasive as to affect macroeconomic growth and development, as well as to be affected by them. The scale of poverty in poor and middle-income countries is often associated with gross inequality of income distribution, which also affects macroeconomic growth and development. Most poor countries, especially in sub-Saharan Africa, are among the most unequal countries in the world.

Poverty reduction, a better income distribution and economic growth are all goals of development in poor countries. These goals, however, do not behave independently of each other. Growth usually reduces overall poverty, or equally, poverty reduction usually enhances growth. This principle is reflected in the formal development strategies of most poor countries, as stated in their "Poverty Reduction Strategy Papers." PRSPs emphasize growth as the main way to halve poverty by 2015, which is the first Millennium Development Goal. It would be more accurate to call PRSPs "Growth Strategy for Poverty Reduction Papers".

While growth tends to reduce poverty on the whole, it is about as often associated with rising as with falling equality in the distribution of income in the short- and medium-terms, when policy reform is most effective for growth. In the long-term, when a country's institutions matter most for growth, a high level of entrenched inequality constrains growth and poverty reduction.

Given these relationships, how should growth strategy respond to the macroeconomic scale of poverty and inequality in poor countries? To answer we posit two principles. The first is as follows.

Growth and Distribution both are Means of Poverty Reduction

Growth and distribution are distinct goals of development strategy, but they are also both instruments for poverty reduction. We know from experience that poverty falls faster with economic growth when income is distributed more equally. A given rate of growth can be associated with a variety of rates of decline of poverty in different

countries, depending on the current distribution of income. Similarly, within a country the responsiveness of poverty to growth varies across sectors and changes over time with differences in the distribution of income.

For example, the impact effect of growth on poverty is higher in Tanzania than it is in Senegal. Income is distributed more equally in Tanzania, which has a Gini index of 0.35, than in Senegal, with a Gini of 0.48.[3] Within Senegal, the impact effect of growth is higher in the rural (Gini index 0.33) than in the urban sector (Gini 0.47). When China started its economic reforms in the late 1970s it had a relatively uniform distribution of income (a rural Gini index of 0.21 in 1978), as do most recently centrally planned economies such as Vietnam and Albania. By 1990 the rural Gini index in China had risen to 0.38, and it continued to rise to 0.46 in 1998. China's rapid growth coincided with fast poverty reduction, but also with rapidly diverging incomes, largely along regional lines. Today China is one of the most unequal countries in the world and poverty is declining less and less in response to growth (Yao *et al.*, 2004).

For these reasons poor people do not care only about economic growth. They also care about how the income generated by growth is distributed. When development strategy is chosen collectively, as in the PRSPs, what poor people think matters. The recent elections in India illustrate the point. In May 2004 "India's electorate ... stunned both the world and itself by throwing the ... government out of office in the middle of one of the country's strongest periods of economic expansion" (*Financial Times*, 14 May 2004). Although net poverty was falling, the speed of the fall among the two-thirds of Indians living and working in the rural economy was not commensurate with the rate of overall growth.

The second principle to guide the way poverty affects growth strategy is as follows.

Growth and Distribution are Inter-Dependent Processes

The short- to medium-term relationship between growth and distribution is unpredictable because they are both affected by other factors, such as macroeconomic constraints, economic structure and patterns of household production and consumption.

3 The Gini index takes values from zero to one, with a higher value indicating a less equal distribution.

Policy reforms that change these factors yield one of a variety of combinations of growth and distribution outcomes. In general there are no purely growth or re-distributive strategies.

Lundberg and Squire (2003) provide direct cross-country evidence that most growth policies also help to determine the distribution of income and vice versa. The research reviewed here (the appendix lists our background papers) provides related evidence from seven very different poor countries of the channels through which growth and distribution or poverty processes depend on each other and respond to policy together. We encapsulate the messages of these case studies in the following six propositions.

- macroeconomic stability reduces poverty
- land re-distribution enhances growth
- income poverty traps constrain growth
- urban-rural growth disparities drive income inequality
- regional poverty traps resist growth
- key growth policies can aggravate poverty gaps

The first three propositions support a positive association between growth and income distribution or poverty outcomes. The last three support a negative association between the two. The opposing combinations are consistent because they refer to disaggregated channels of transmission from policy reform rather than to a single aggregated relationship between growth and distribution outcomes. Depending on the policy reform or on which channel dominates, different countries may show different combinations of growth and distribution outcomes or of growth and poverty responses, or the same country may show different combinations over time.

Let us accept these two guiding principles, that growth and distribution are both means of poverty reduction and that the two depend on each other. We may now point to the conclusions we will reach, following discussion of these six propositions, about how the nature of poverty in poor countries should affect the choice of growth strategy.

If growth and distribution were independent processes, we could pursue the growth, distribution, and poverty reduction objectives independently. Following purely technical

criteria we would combine growth and re-distributive policies into a development strategy that achieves the fastest rates of growth and poverty reduction.

Since growth and distribution are inter-dependent, in general maximizing the growth rate is not equivalent to maximizing the rate of poverty reduction. The positive correlation between growth and poverty reduction does not always extend to fast growth and rapid poverty reduction. For example, the state of Kerala, with a population of 30 million people, has one of the fastest rates of income poverty reduction in India, and some of the most advanced indicators of human welfare, exceeding those in China. Yet it has an average growth rate below that of many other Indian states and much lower than that of China (Sen, 2004: 64). To the extent this is a structural trade-off in outcomes, we are forced to make political choices between the growth, distribution and poverty reduction objectives of development.

Since we cannot have a purely technical prescription for poverty reduction strategy, instead of identifying optimal policies we characterize the nature of policy choices to be made when designing PRSPs. For example, we find evidence from Vietnam and Malawi that land reform both improves the distribution of income and enhances growth, with compound effect on poverty. This is a 'win-win' policy which is not emphasized in current PRSPs. But land reform may not achieve as fast a rate of growth as other less benign policies, and it does not seem able to sustain growth indefinitely.

In contrast, Sri Lanka's analysis of agricultural trade liberalisation, combined with experience elsewhere, suggests that trade liberalisation is a 'win-lose' policy. Although it is likely to increase growth and reduce poverty overall, it will increase poverty in certain agricultural regions and may worsen the overall distribution of income over time. This is especially worrisome if income is currently very unequally distributed, as the poverty impact of possibly rapid growth will be small and get smaller.

Designing development strategy in PRSPs is not simply a matter of fine-tuning a globally applicable growth policy so as to reduce transition costs for the poor. It is about selecting growth and distribution policies in context, politically balancing competing objectives and technically achieving the best possible terms from unavoidable policy trade-offs. This makes a coherent macroeconomic growth and poverty reduction strategy.

2. Poverty Features and PRSP Growth Strategy

The share of the population that is poor in poor countries is usually very high, often more than half and sometimes over 80 percent (Table 1). Poverty in poor countries affects the behaviour of the entire economy and the course of development. Poverty overall is, in turn, affected by macroeconomic outcomes. It is not surprising, then, that all of the PRSPs produced by poor countries identify economic growth as the key way to reduce poverty (Gottschalk[4]). Many of them, in fact, see growth as the only way to reduce poverty on a broad scale, sufficient for the first Millennium Development Goal (MDG).

Table 1
Poverty Incidence in Selected Poor Countries

	Population living below the poverty line		Population living below $1/day (%)[1]
	Year	%	
Bolivia	1999	63.0	14.4
Burkina Faso	1998	45.3	61.2
Ethiopia	1999/2000	44.0	81.9
Honduras	1999	66.0	23.8
Malawi	1998	65.3	41.7
Mauritania	1996	50.0	28.6
Mozambique	1996/1997	69.4	37.9
Nicaragua	1998	47.9	82.3
Niger	1993	63.0	61.4
Rwanda	2001	60.3	35.7
Senegal	2001	53.9	26.3
Tanzania	n.a.	n.a.	19.9
Uganda	1997	44.0	82.2
Vietnam	1998	37.4	17.7
Zambia	1998	72.9	63.7

Source: Gottschalk, draft background paper. The data are from the countries' PRSPs, based on national surveys.

1 Data are from the Human Development Report 2003 of the United Nations Development Program. The data are the most recent available.

4 We refer to our background research papers by author alone. The background papers are listed in the appendix.

> *All PRSPs and I-PRSPs ... give absolute priority to economic growth as a means of poverty reduction.... Surprisingly, only a quarter of these PRSPs and I-PRSPs use the term 'pro-poor growth' or contain statements about ensuring that growth is equitably distributed, suggesting a continuing faith in the power of growth alone to reduce poverty without significant attention to equity* (Marcus and Wilkinson, 2002: 9).

Gottschalk reports that the main elements of the proposed growth strategies are three: i) investment in human capital and economic and social infrastructure; ii) macroeconomic stability; and iii) structural and institutional reform, mainly labour, tax, financial and trade reforms. Some of the PRSPs do say that growth should be spread out through the economy, so that the poor are better placed to participate. To accomplish this, they promise to prioritise agricultural development, since within poor countries 70 percent of the poor live in rural areas and most work in agriculture.

However, the PRSPs do not elaborate a growth strategy, much less an agricultural growth strategy, based on an analysis of the features of poverty in the country. The first official World Bank and IMF review of PRSPs found that all of them include a poverty profile, but none uses it to help determine macroeconomic development policies and most do not explain how PRSP policies will reduce poverty (IDA and IMF, 2002, p. 32). The PRSPs tend to simply present growth targets for the economy as a whole without substantial discussion of how they derive from policy reforms. The growth targets appear to be influenced by what is required to meet the MDG poverty target, based on estimates of the responsiveness of poverty to growth. The targets are associated with a required private investment rate derived from an assumed incremental capital-output ratio.

In many cases the targeted investment and growth rates are unrealistically high. Nearly all are substantially above historical growth rates (Tables 2 and 3). Even so, Ki shows for Senegal that, given badly distributed income (one of the worst in the world), the MDG poverty target will not be met. Hanmer *et al.* (1999) find that without re-distributive policy sub-Saharan Africa will need to grow by 8 percent per year until 2015 to reach MDG poverty targets, faster than the already ambitious PRSP targets.

PRSP growth targets are set for the economy as a whole, rather than separately for the manufacturing and agricultural sectors as would befit an effort to make growth

broadly based. In poor countries, although most of the population and most of the poor live in rural areas, agriculture contributes only 27 percent to the economy (17 percent in sub-Saharan Africa). Agricultural productivity is very low compared to that of manufacturing and services. From 1980 to 1998 agricultural output per worker rose by 1.6 percent per year for all poor countries, but in sub-Saharan Africa it declined by 0.6 percent per year (World Bank, 2000:16).

Most poor people live in South Asia, particularly in China and India, but most of the poor countries are in sub-Saharan Africa. These countries are among the most unequal in the world in terms of the distribution of income, as a region second only to Latin America (Chart 1). Yet PRSPs have little to say about re-distributive policy or about the implications of the distribution of income for growth strategy.

Table 2
GDP Growth in the 1990s and the PRSP Growth Targets (%)

	1990-99	1995-99	2000	Target
Bolivia	4.0	3.9	2.4	5.0-5.5
Burkina Faso	4.7	5.9	2.2	7.0-8.0
Ethiopia	3.7	5.4	5.4	7.0
Honduras	2.8	2.8	4.8	5.0-6.0
Malawi	4.2	7.0	1.7	5.0
Mauritania	3.4	4.2	5.2	8.0
Mozambique	5.7	8.5	1.6	7.0
Nicaragua	2.9	5.1	4.3	4.5
Niger	1.9	3.7	0.1	4.0
Rwanda	2.1	15.7	5.6	7.0
Senegal	3.3	5.3	5.6	7.0-8.0
Tanzania	3.1	3.8	5.1	5.0-6.0
Uganda	6.9	7.7	3.5	7.0
Vietnam	7.4	7.5	5.5	8.0
Zambia	0.3	1.5	3.5	4.0

Source: World Development Indicators and PRSP documents, in Gottschalk.

Table 3
Level of Investment Needed to Meet the Growth Targets

	Investment/GDP (average 1996-2000)	Investment/GDP (year 2000)	Investment/GDP (required for growth target[1])
Bolivia	19.1	17.2	23.0-25.4
Burkina Faso	27.6	25.5	32.2-36-8
Ethiopia	16.5	15.3	18.4
Honduras	32.4	32.5	37.3-44.8
Malawi	12.9	12.5	15.5
Mauritania	20.6	30.3	35.4
Mozambique	28.6	39.6	17.6
Nicaragua	30.8[2]	24.22[3]	25.4
Niger	10.6	10.8	10.7[4]
Rwanda	15.5	17.5	12.6
Senegal	18.8	19.8	23.9-27.3
Tanzania	15.7	17.6	20.1-24.1
Uganda	17.7	19.8	22.3
Vietnam	28.5	29.6	35.7
Zambia	16.0	18.7	19.5

Source: World Development Indicators, in Gottschalk.

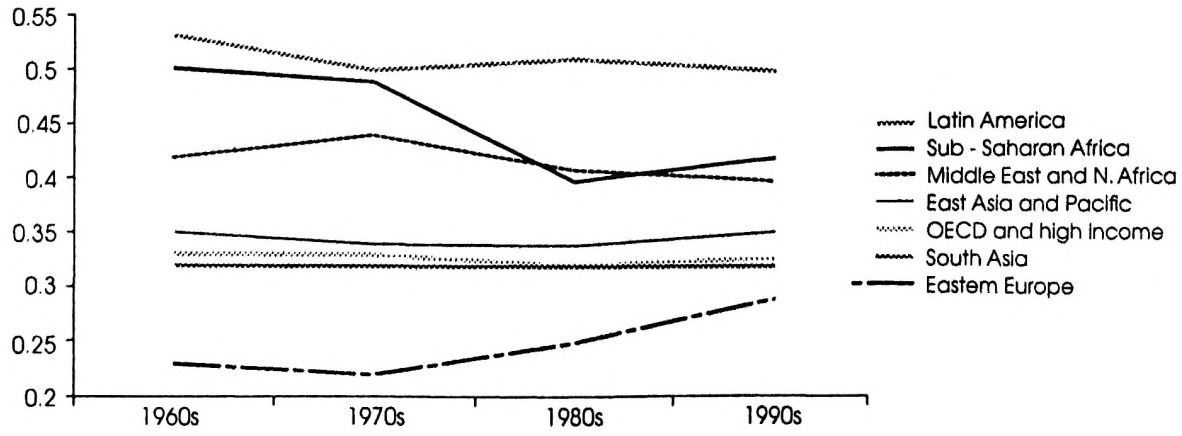
1 Calculated using the countries' average incremental-capital output ratios (ICOR) over the 1996-2000 period, with years marked by deep recession (often caused by exogenous shocks) excluded.

2 Average 1996-1998.

3 Refers to the year 1998.

4 ICOR over the 1995-1998 period.

Figure 1: Regional Gini Coefficients
(Median values; a larger coefficient indicates a less equal distribution)



Source: Based on data from Deininger and Squire (1998), re-produced in Bigsten and Shimeles (2003: 2).

3. Propositions about Links between Growth, Distribution and Poverty

The eight research papers reviewed here identify salient features of poverty and income distribution in each country and propose policies to address them while promoting economic growth. These papers recognize the inter-dependence of growth and distribution dynamics and the contribution of each to poverty reduction. The research emphasizes the relevance of high or rising inequality to poverty reduction strategy, and the need to go beyond merely setting aggregate growth targets.

The country research makes six key propositions concerning connections between growth, income distribution and poverty, re-produced here from our introduction.

- macroeconomic stability reduces poverty
- land re-distribution enhances growth
- income poverty traps constrain growth
- urban-rural growth disparities drive income inequality
- regional poverty traps resist growth
- key growth policies can aggravate poverty gaps

These are not the usual observations on correlations between aggregate outcomes. They are correlations or causal relationships between growth policies and distribution or poverty policies or features. These relationships arise primarily from the economic structure of low-income developing countries and the tendency of growth to concentrate regionally or locally. The propositions suggest that growth policies may be either of two types in terms of impact on growth and distribution. They may enhance both growth and distribution (win-win) or they may enhance growth while aggravating income gaps (win-lose).

3.1. Macroeconomic Stability Reduces Poverty

Current growth strategies presented in the PRSPs emphasize macroeconomic stability, along with private investment and structural reforms (Gottschalk). The way to achieve macroeconomic stability, according to the PRSP documents, is nearly always to restrain public spending and maintain price stability.

This approach is particularly appropriate when using economic growth as a means of poverty reduction. There is persuasive evidence not only that price stability is needed for growth, but that it reduces poverty directly, adding to its indirect contribution to poverty reduction through growth. We will briefly review this evidence and the transmission mechanisms later.

Gottschalk points out that demand stability is also an important part of macroeconomic stability, but is neglected in the PRSPs. Demand stability is particularly relevant to poor countries since they tend to have narrow producing and exporting bases and increasingly open trade regimes. Thus they are vulnerable to natural disasters and external shocks. The latter include a fall of the terms of trade (fall of the price of the primary commodity export or rise in the price of imported fuel or imported manufacturing materials) or of foreign direct investment or tourism, or unstable flows of foreign assistance. Since most poor countries have small economies external shocks have a large domestic impact. Poverty in poor countries nearly always rises following a negative external shock, and tends not to fall to pre-shock levels with the recovery of the overall economy.

Gottschalk calls for more attention to fiscal and monetary flexibility in the PRSPs, without sacrificing price stability, to deal with external shocks. Poor countries should be able to use countercyclical macroeconomic policy to maintain demand stability.

3.2. Land Re-Distribution Enhances Growth

Le *et al.* writing of Vietnam note that the main policy reform leading to a halving of poverty in less than a decade was de-collectivization of agricultural production (see also World Bank, 2001). This was effectively land reform, in which private access rights were more or less evenly distributed among households. The reform initiated a period of fast agricultural growth epitomized by the transformation of Vietnam from a rice importer before 1989 to the world's second or third largest rice exporter thereafter.

Chirwa takes up the theme of land reform for Malawi, identifying the small size of household land holdings as a constraint on growth and poverty reduction. Malawi had four decades of agriculture-led development, which is again emphasized in the current

PRSP. Through most of those decades Malawi experienced erratic growth and persistent and, recently, rising poverty. Agricultural development as such does not ensure either rapid growth or rapid poverty reduction (see also Osmani, 2000).

Malawi has a dual agricultural system comprising large-scale estates, most producing tobacco for export, and smallholder household farms growing food for domestic consumption. Through most of the past four decades agricultural policy favoured the estates at the expense of the smallholders. This was achieved by regulating production of crops and prices for marketing agents and producers. The policy held despite a preponderance of smallholder farms accounting for more than 80 percent of households.

In the mid-1980s Malawi began a series of agricultural reforms, mostly various de-regulations, leading to a more balanced treatment of smallholders and estates. For example, liberalisation of tobacco production in 1990 led to an increase in smallholders growing tobacco, such that they now account for 70 percent of production. Yet most smallholders continue to grow food alone and productivity remains low.

Currently the 1.8-2.0 million smallholder farmers who account for 84 percent of value-added in agriculture own on average only one hectare of land. Chirwa provides evidence that agricultural productivity is positively associated with the size of land holdings, at least where initial land holdings are very small. He contends that the absence of land reform inhibited the effect of the many other reforms pursued since the mid-1980s. Chirwa shows that increasing household land size marginally will also directly reduce poverty. Land reform is physically feasible, since two-thirds of the country's total land area is under customary tenure and many of the tobacco estates are abandoned.

3.3. Income Poverty Traps Constrain Growth

Mercado *et al.* on Bolivia emphasize the difference between static and dynamic poverty at the household level in poor countries. Static poverty refers to a situation where the same households are poor in perpetuity. Dynamic poverty refers to a situation where different households are poor at different times, although the overall level of poverty in the country may not change.

The difference between static poverty or an income poverty trap, which Mercado *et al.* refer to as 'social immobility', and dynamic poverty matters for policy and for poverty and growth. If poverty is dynamic or transitory for each household, the government can address it by providing various forms of insurance, such as unemployment benefits, and borrowing facilities so that households may maintain a steady level of consumption through both good and bad times.

If poverty is static, poverty policy is essentially re-distributive, and permanently and uni-directionally so. Further, static poverty or social immobility increases the overall level of poverty and constrains economic growth. Poor households have no incentive to invest in education, long-term crops or equipment if they have no chance of escaping poverty anyway. The expectation that effort and expense will not return a benefit is self-fulfilling as it reduces the amount of effort or investment. They will also not be able to borrow to invest. The overall level of investment in the economy is then below potential, but in addition productivity for the given level of investment is reduced by the waste of talent, ideas, and entrepreneurship latent in poor households.

Mercado *et al.* produce evidence that social immobility in Bolivia is exceptionally high, even compared to its neighbours. They also show that social immobility is negatively correlated with growth in 18 countries in Latin America.

A key mechanism behind social immobility is education across generations. In Bolivia and elsewhere in Latin America family background affects the education outcomes of young people. That is, a person's quality of education is determined largely by the education and income of the parents. Although almost 95 percent of 7-13 year olds attend school, the quality of public education in Bolivia is very low relative to other Latin American countries, and the gap between public and private school students is among the highest in the region.

3.4 Urban-Rural Growth Disparities Drive Income Inequality

In most poor countries the distribution of income tends to be more uniform in the rural than in the urban sector. Thus, for a given sectoral rate of growth, poverty will fall faster in rural areas, both relative to the initial sector poverty rates and in absolute

numbers of people. Ki demonstrates this for Senegal, and it is the rationale for proposing a strategy of agricultural growth in many countries' PRSPs.

Wangwe observes that the agricultural sector in Tanzania is large, accounting for 48 percent of the economy. The agricultural growth rate since 1986 has been a fast 3.9 percent and, because of the size of the sector, income is fairly evenly distributed, as indicated by an overall Gini coefficient of 0.35.

By contrast, Ki reports that in Senegal primary activities, most of which are in agriculture, contribute only 19 percent to the economy. Moreover, the primary sector is growing at only 2.2 percent per year. Partly as a result, overall income is very unevenly distributed in Senegal, which has an overall Gini coefficient of 0.48.

In Vietnam fast growth since the early 1990s originated in agriculture and was accompanied by fast poverty reduction across the economy. However, Le *et al.* find that recently the households that benefit most from growth have well-educated members working in the urban services sector. Those benefiting least are in remote regions, are ethnic minorities or work in agriculture. The authors also report that overall inequality is rising with growth, as the rural-urban income gap widens.

In a similar vein, Osmani (2000: 115) points out that mainland China's rapid economic growth since the mid-1980s is characterized by rising inequality, with the result that the rate of poverty reduction has fallen drastically. The rise in inequality essentially reflects urban-rural or regional disparities, as rural regions with backward infrastructure are increasingly left behind.

3.5 Regional Poverty Traps Resist Growth

Regional poverty traps are defined by geography as distinct from income poverty traps defined by economic class. Regional traps occur in some poor countries even when the economy as a whole is growing steadily, income is evenly distributed or overall poverty in the country is falling. They exist, for example, in Albania and Vietnam which have all three advantageous features. Poverty traps are usually located in remote areas and may affect ethnic minorities most.

Regional poverty traps in poor countries may be large in area and can affect the course of the entire economy. In the remote mountainous regions of north and northeast Albania, where the main industry is mining, nearly half the population is poor, about double the poverty rate for the whole country. In the absence of a strong government response to the discrepancy, Mancellari and Hida say that there began a massive emigration from the country as well as an internal migration from the remote regions to the cities. The emigration has some positive benefit in the form of large remittances, reaching at least 15 percent of GDP in 2001. The internal migration is natural, given that, as reported by Mancellari and Hida, most of the benefits of growth go to the cities, while rural and remote areas are left behind.

In Vietnam, poverty had been halved by 2002, but the poverty rate remains relatively high at 30 percent, and is proving harder to address through growth than before. This is partly because of the persistence of poverty in remote regions, many of which are inhabited by ethnic minorities. In the northwest of the country the poverty rate is 70 percent, and generally the dispersion in poverty rates across the country is large. Le *et al.* find in regression analysis that regionalism and ethnicity partly explain differences in provincial poverty rates.

3.6 Key Growth Policies can Aggravate Poverty Gaps

It is hard to generalize about growth policies, to be confident that a particular policy will initiate and sustain growth in most poor countries. However, the policy or policy regime that comes closest to generating such confidence is "openness", comprising trade liberalisation and a realistic or depreciated real exchange rate (Rodrik, 2004). Jayanetti and Tilakaratna advocate trade liberalisation for Sri Lanka, arguing that it is necessary to achieve the growth that is the primary means of poverty reduction. Their paper focuses on the short-term impact effect of liberalising trade in agriculture, specifically in rice. They show through a simulation exercise that this will raise average incomes, improve the distribution of income and reduce poverty. These results follow naturally from their observations that Sri Lanka is a net importer of rice, and that the poor spend a larger share of their incomes on rice than others do.

Sri Lanka produces most of the rice it consumes, though, and this contributes 20 percent to the economy. Jayanetti and Tilakaratna note that rice is produced throughout

the country, but some districts depend almost wholly on it for income and most of those who grow it are poor. They show that rice producers across the country and rice-producing districts in particular will be worse off after liberalisation. Indeed, this is the reason the government was not willing or able to fully liberalise rice imports before. The government tried to have it both ways, appeasing rice consumers and producers alike with frequent and ad hoc changes to tariffs and inconsistent regulation of production and importation.

Thus, although liberalising rice imports would likely improve the distribution of income and reduce the overall poverty rate, it was prevented by a probable widening of the gap between poor rice consumers and poor rice producers. Jayanetti and Tilakaratna therefore call for combining agricultural trade liberalisation with compensation for rice producers.

The analysis and conclusions of Jayanetti and Tilakaratna closely follow the approach to trade liberalisation advocated by Winters *et al.* (2002). That is that trade liberalisation is necessary but should be accompanied by a targeted social safety net to protect the poor from adjustment costs and to buttress political support for it. This is appropriate for growth policy that improves aggregate welfare with multifarious impacts on poverty at local and regional levels. However, while trade liberalisation may tend to promote growth and reduce poverty in poor countries, in many circumstances it also tends to aggravate income as well as poverty gaps. This undermines a key development objective and overall welfare and compromises the impact of growth on aggregate poverty, especially when incomes are currently badly distributed. In such circumstances the role of trade liberalisation in growth strategy at all is questionable.

4. Policy Choices

The preceding six propositions testify to the entanglement of growth and distribution processes in poor countries. So it is that few macroeconomic or development policies can be identified as purely growth or purely re-distributive policies. As we shall see, most policies affect both, and therefore, when considering the impact of policy on poverty, one must trace out the channels of transmission through both growth and distribution.

We emphasized in our introduction that growth, distribution and poverty are independent objectives of development, even if they are inter-dependent processes. The goal of growth strategy, then, is not necessarily to maximize the rate of growth or the uniformity of the distribution of income or the rate of poverty reduction. The desired combination of these three objectives is decided by the individual country through social and political processes. Keeping to this principle, we do not try to elicit from the preceding propositions and external evidence specific policies to be included in growth strategy. Rather we look for policy choices and combinations available to each poor country as it designs its own growth strategy.

Closely following the propositions we find six development policy options, grouped according to their anticipated growth and distribution outcomes, as suggested by our research and other evidence. Classifying growth policies this way helps clarify the issues and choices involved in designing a growth strategy. However, while not arbitrary, our selection and allocation of policies should not be taken too seriously. Exceptions can be cited in many cases, depending on the context.

Three of our policy options tend to enhance growth and narrow income gaps. These are potentially 'win-win' policies and they include:

- price and demand stability
- land reform
- agricultural productivity growth

Two other policy options tend to enhance growth while aggravating income gaps, or to narrow income gaps at the expense of the rate of growth. These are potentially 'win-lose' policies:

- public investment
- trade liberalisation

Another important policy option is not easy to categorize as either win-win or win-lose, although it will very likely have such characteristics. It is:

- public education

There is a strong pre-disposition among many analysts and development professionals, including our own researchers, to believe that public education is a win-win policy. So far, though, evidence from poor countries favours the view that public education tends to improve income distribution while reducing, or at least not helping, the growth rate.

4.1 Win-Win Policies

These are the desirables, the policies that should be, but are not always, emphasized in development strategy in PRSPs. They are efficient in terms of contributing to all of the development objectives. However, individually they do not necessarily yield maximum growth or maximum poverty reduction rates.

Price and Demand Stability

Conventional wisdom and much evidence has it that macroeconomic stability is necessary for growth, as noted above (see also Rodrik, 2004). This usually refers to price stability, but Gottschalk contends that it also applies to demand stability, which in the face of external shocks requires countercyclical fiscal policy. There is also evidence that price and demand stability improve the distribution of income and reduce poverty directly, in addition to the indirect effect through growth.

Lundberg and Squire (2003) test a number of conventional policies for joint determination of growth and distribution, using cross-country regression analysis. They find that controlling inflation both increases the rate of growth and improves the distribution of income. Cashin (2001) reviews evidence on the impact of inflation on poverty and finds a consistently positive relationship between the two.

The link between inflation and inequality or poverty operates primarily through the behaviour of real wages, on which the poor rely. Real wages tend to fall as inflation rises. However, the effect is non-linear. Reducing inflation from hyperinflationary levels lowers inequality and poverty much more than further reductions to low, single digit levels.

In many poor countries where monetary instruments are few, reducing inflation requires restraining public spending. This is reflected in the macroeconomic policy prescriptions of many of the PRSP documents (Gottschalk). Such cutbacks affect, and

sometimes weigh heavily against, spending on social and poverty-reduction programs. They also affect spending to counter negative external demand shocks, which tend to affect the poor most. There is a balance to be struck between fiscal restraint to contain inflation and spending to protect the poor directly (Gottschalk). This balance is especially important, and perhaps hard to achieve, when economic growth is slowing down.

Land Reform

We noted earlier that land reform released growth in Vietnam and may do so in Malawi. The evidence in Lundberg and Squire (2003) is that land reform enhances growth on average in most countries and also improves the distribution of income substantially. This is because of the dual role of land as wealth and as a productive input. We saw that re-distributing land permits smallholder farmers to capture more economies of scale and adopt new technologies. It also provides a use for the under-employed labour of poor households and may improve their access to credit. Chirwa reports that a major reason income is distributed so unevenly in sub-Saharan Africa is that productive assets, especially land, are very unevenly distributed.

The experience of Vietnam, however, suggests that while land reform can initiate rapid growth, it cannot sustain it indefinitely. Le *et al.* conclude that agricultural growth in Vietnam is reaching its limits with the completion of reforms. It no longer provides a significant way out of poverty for the remaining poor. They specifically find that landlessness is not an important cause of household poverty.

Further, land reform in Vietnam did not preclude regional poverty traps nor did it prevent increasing inequality of income with growth (although it may have contained the increase in inequality). To enhance growth and address persistent poverty Le *et al.* call for a new wave of rural and national reforms to facilitate entrepreneurship and off-farm employment creation.

Agricultural Productivity Growth

In poor countries, as Ki emphasizes, incomes are distributed more uniformly in agricultural or rural areas than elsewhere. At the same time, Ki confirms the well-known feature of development that agriculture grows more slowly than do industry and

services, so that it's share of the economy declines over time. This does not mean, though, that new resources are less productive when invested in agriculture rather than elsewhere, especially in poor countries such as Tanzania where agricultural activities account for so much of the economy. Because of inter-sectoral linkages, a significant boost to agricultural productivity, such as occurred in Vietnam after its land reforms in the late 1980s, could generate the fastest overall growth as well as poverty reduction. Murphy *et al.* (1989) show that if the agricultural sector is important enough, a large increase in productivity will raise incomes sufficiently to generate strong domestic demand for manufactures and services. In this way, growth spreads through consumption linkages from the agricultural to other economic sectors.

A growth strategy that emphasizes increasing agricultural productivity, then, can be justified in terms of both poverty reduction and growth. It is immediately the most effective way to reduce aggregate poverty and will eventually stimulate demand for manufactures through the appearance of a rural middle-class. This is how some of the East Asian countries, including South Korea and Taiwan, achieved their growth-with-equity 'miracles'.

A purely agriculture-led growth strategy may not, however, be viable over the long term, as noted earlier for the case of Vietnam. Le *et al.* note that there is a steep negative correlation between poverty rates and the number of enterprises by province. They call for increasing off-farm employment, as agricultural and institutional reforms are exhausted.

Further, recent scholarship emphasizes that sustained growth depends largely on technological progress, and this growth process tends to concentrate in urban sites. That is, technological progress is characterized by local increasing returns to scale. Growth is faster when productive infrastructure, machinery and equipment and skilled labour locate close to each other in 'growth poles', rather than being spread out through rural areas (see Easterly, 2001, for a review of this literature). A strategy of agricultural growth may still work, especially in the event of a green revolution or if new export markets open up. However, if the agricultural sector is small, an urban-centred and industry-led growth strategy may yield faster overall growth. This reasoning may partly explain China's recent combination of fast growth and rapidly worsening income distribution, and its current strategy of large-scale urbanization, entailing a massive shift of the population from rural to urban areas.

4.2 Win-Lose Policies

The win-lose policies suggested by our research propositions cannot simply be discarded from a growth strategy because alternative win-win policies are available. Win-win does not always dominate win-lose. We already mentioned one reason for this – trade liberalisation, for example, is associated with a better growth rate than public education.

There is another reason why win-lose policies such as public investment in remote infrastructure are often critical. Sometimes they alone can address certain features of a country's poverty profile, including urban-rural or regional growth disparities which underlie an uneven distribution of income.

To deploy win-lose policies to advantage at the level of development strategy, it is necessary to understand the nature of the trade-off between outcomes.

Public Investment

In most poor countries poverty is particularly a rural or regional trait, as in Albania and Vietnam. This is in great part because infrastructure for production (such as irrigation facilities) and transport is not adequate in those areas. The inadequacy is not and usually cannot be corrected by private capital investors, for two reasons. First, the investment projects are naturally very large in scale, exceeding the resources of private investors or even the domestic financial sector. Second, the projects are not privately profitable at current levels of economic activity in the targeted regions, even if they are socially beneficial.

Public investment is needed to correct the imbalance of infrastructure between urban and rural or remote areas. But public capital for productive investment is also scarce. It is constrained by the limited scope for raising tax revenues in poor countries and inadequate foreign aid. It is also constrained by the need to avoid large fiscal deficits that have to be financed either by printing money (and so increasing the rate of price inflation) or borrowing too much. These requirements are another way in which poverty in poor countries influences the economy as a whole. Policy-makers must choose between investing in urban areas and in the manufacturing and services sectors where productivity and growth is high, or in remote regions where productivity and growth rates are lower but poverty tends to be higher.

Mancellari and Hida address this problem in Albania. They find that policy announcements favour public investment in infrastructure in the remote and mountainous regions. However, in practice, public spending goes disproportionately to the nearer middle-income regions, at the particular expense of the poorest and most remote regions. This is true for overall investment and for spending in particular sectors such as health and education. Mancellari and Hida reveal that the national government bases fiscal transfers to the provinces solely on their share of the population, without regard to differences in incomes or incidence of poverty. The allocation of public spending in this way partly explains the massive internal migration from remote to near regions and urban centres, and is magnified by that migration.

Considering the rising growth rates and inequality in China since the mid-1980s, Osmani (2000) wonders whether re-directing public investment to lagging regions could maintain rapid growth while reducing inequality. He does not think so.

> *The lagging areas seem to suffer from a spatial externality that makes for a lower rate of return to investment in comparison with the more advanced regions. If this is true, redirection of public investment toward these areas will involve a sacrifice of overall growth. Yet, faster pace of poverty reduction requires that public investment should be redirected toward these areas* (p.: 115).

The trade-off arising from the problem of where to invest public money is directly relevant to regional growth and poverty disparities. The trade-off is magnified by an indirect effect of the public investment choice, operating through the ability of the government to raise tax revenues. If public money is currently invested primarily in remote areas, future growth rates and the capacity to raise taxes for investment may fall. Alternatively, if taxes are raised now to ease the public investment trade-off, private investment will usually suffer, leading to lower overall growth rates in the future.

Trade Liberalisation

Trade liberalisation, as a component of economic 'openness' to the international economy, is one of the growth policies most likely to deliver fast growth and reduce the overall level of poverty. Unfortunately, in many cases it also tends to worsen the distribution of income. Lundberg and Squire (2003) find strong cross-country evidence

that trade and exchange rate openness affect growth and income distribution together and that there is a trade-off between the two. They find that the effect on growth is stronger than on distribution, so that openness tends to reduce poverty.

According to classical economic analysis, contrary to the empirical evidence, trade liberalisation should improve the distribution of income. That analysis presumes that poor countries have more unskilled labour than other factors of production, while rich countries have a preponderance of skilled labour (human capital) and physical capital. By the Ricardian principle of comparative advantage, poor countries will export unskilled-labour-intensive products, thus increasing the demand for, and wages of, unskilled labour. Since wages are the main income of the poor, they should benefit more from trade than the non-poor in poor countries.

There are at least two ways in which trade liberalisation, nevertheless, may aggravate income gaps in poor countries. First, many poor countries, especially in Latin America and sub-Saharan Africa, are relatively abundant in land and natural resources rather than in labour. According to Fischer (2001), after trade liberalisation exports of land-intensive products and natural resources increase, so that land- and natural resource-owners enjoy a capital gain; real wages may also rise. However, on the assumption that everyone earns the same wage but not everyone owns the same amount of land or natural resources, income inequality will also rise. Thus natural resource- and land-abundant countries face a trade liberalisation trade-off that labour-abundant countries, such as many in Asia, do not face.

Second, according to Aghion *et al.* (1999), trade liberalisation raises growth primarily through an increase in imports of material inputs. These inputs displace unskilled labour and introduce new technology which increases the demand for skilled labour, widening the unskilled-skilled wage gap. This occurs in all sectors that use imported inputs.

The effect of trade liberalisation on income distribution matters even if the growth effect dominates so that poverty is declining overall. This is because distribution contributes independently to development and welfare. We have cases and evidence where the populace rejected trade liberalisation as a growth policy because of its distributional consequences. Sachs (1987) contends, for example, that this is why a

strategy of export-led growth was politically much harder to adopt, and until the 1990s much less adopted, in Latin America than in Asia. Dutt and Mitra (2002) show with cross-country evidence that in countries with democratic majority-voting for governments the openness of trade policy depends on its consequences for inequality in the country.

In many cases it may be possible to compensate local losers from trade liberalisation by combining it with a targeted social safety net. This is the approach championed by Winters *et al.* (2002), and may be appropriate for Sri Lanka as described earlier by Jayanetti and Tilakaratna. In other cases, however, where the distributional consequences of liberalisation are severe and widespread, compensation may not be effective. One reason is that trade liberalisation also reduces the government's control over the economy. Spector (2001) points out that governments often re-distribute incomes by manipulating taxes which operate largely by changing equilibrium prices and wages. When trade in a small economy is liberalised, though, domestic prices and wages are set in the international market and taxes can no longer be used to offset widening income gaps.

The effect of trade liberalisation on income distribution also matters because it affects how much poverty falls in response to the growth that liberalisation produces. If the distribution of income worsens over time it reduces the poverty impact of growth, as in China (Yao *et al.*, 2004). This is more important when the initial distribution of income is already very unequal, as in Latin America and sub-Saharan Africa.

4.3 Uncertain Outcome Combinations

There will always be exceptions to the preceding allocation of policies among win-win and win-lose categories. The categories are only useful insofar as they emphasize and serve as a generally reliable guide to the multiple impacts of individual policies, as supported by experience with policy implementation. For some important policies, though, such as public education, the evidence is too equivocal to permit such a classification.

Mercado *et al.* argue that high quality public education, made accessible to the poor, can both reduce poverty and increase the growth rate of the economy by transforming

poverty from a static to a dynamic thing. They base their argument on a finding that static poverty or social immobility, which is pervasive in Bolivia, largely arises from low-quality public education, and that in Bolivia and many other countries social immobility is associated with low growth.

Lundberg and Squire (2003) show that a more educated population does indeed improve the distribution of income. However, they also discover that education does not promote growth, which is consistent with the balance of evidence elsewhere (Easterly, 2001). Public education has the potential to be a win-win policy, being necessary for attacking social immobility and effective in improving the distribution of income. But, according to Mercado *et al.*

> *High social mobility is not a sufficient condition for high growth. It also requires that productive activities yield higher returns to talent than unproductive rent-seeking activities. If talent is attracted to rent-seeking activities rather than productive activities, then growth will be limited irrespective of the degree of social mobility present in society* (p. 9).

Mercado *et al.* give two additional reasons why more education may not yield more growth. First, education may merely signal family background rather than indicate talent. Second, poor households may nevertheless not invest in education or devote effort to it if there is little demand for skills in the economy.

For public education to increase economic growth as well as improve the distribution of income by reducing social immobility, it may have to be accompanied by other growth policies. These include trade liberalisation to raise the demand for skilled labour and measures to restrain corruption and cronyism (that is, to limit rent-seeking opportunities).

5. Growth Strategy and Poverty Reduction

In poor countries, poverty occurs on a macroeconomic scale, so that it is deeply affected by both growth in incomes and the distribution of income. Moreover, growth and distribution interact complicatedly with compound effect on poverty, as indicated by our research from seven poor countries with variable geographies, institutions,

economic and political structures and past policy experiments. Policies conventionally thought of in terms of their ability to stimulate growth, such as macroeconomic stability, also directly influence distribution and poverty. Policies which re-distribute income or assets, such as land reform, also profoundly affect prospects for growth. Income poverty traps or social immobility constrain growth while regional poverty traps resist even rapid growth in the rest of the economy. Urban-rural growth disparities and key growth processes based on technological progress widen income gaps.

Growth and distribution and poverty reduction are inter-dependent in poor countries, but they are independent objectives of development strategy. These two principles guide and emerge from the preceding six research propositions. Together, the principles and propositions show how poverty in poor countries informs growth strategy. We understand the relationship at two levels, overall strategy design and individual policy selection.

With respect to poverty reduction strategy, first, the goal is not necessarily to maximize the rate of growth or to maximize the rate of poverty reduction. Rather, in the context of overall development strategy the goal is to achieve a balance between growth, distribution and poverty reduction. The appropriate balance cannot be identified by experts or by analysis, but can be achieved through an informed participatory social and political process as envisioned by local democratic institutions or the PRSP model.

Second, it is misleading to consider only conventional growth policies, or to investigate the effectiveness of growth policies only for growth and poverty outcomes. Re-distributive policies also affect growth and poverty outcomes.

Last, it is also ill-conceived to treat growth policy and re-distribution policy separately, since each modulates the effectiveness of the other. Growth and distribution policies cannot be combined in a poverty reduction strategy without considering their inter-active consequences.

We characterize the policies proposed by our eight background and country studies in terms of their joint impact on growth and distribution. Individual policies will generally have the potential to increase the rate of growth and improve the distribution

of income (win-win), or improve one and worsen the other (win-lose). This simple taxonomy yields the following prescriptions for policy selection for poverty reduction.

First, priority should be given to win-win policies, such as price and demand stability, land reform, agricultural productivity growth and, in appropriate circumstances, public education. These have the greatest reducing impact on poverty in poor countries. Currently PRSPs do emphasize price stability and public education, but do not explicitly link public education to the complementary institutional reforms needed to ensure that it actually promotes growth, such as anti-corruption and equal opportunities initiatives. They also do not emphasize land reform or contain credible plans to significantly boost agricultural productivity.

Second, some key win-lose growth policies, such as trade liberalisation, may be rejected not only in the event they are not expected to stimulate growth, but, even when they are expected to promote growth, because of their harmful impact on distribution. This is especially relevant where current income is very unevenly distributed, as in most of sub-Saharan Africa.

Third, not all such win-lose policies will, or indeed can, be rejected. That is, win-win policies do not always dominate win-lose policies, because there are multiple differences in the way each policy affects growth, distribution and poverty. Some win-lose policies may achieve a higher or more sustainable growth rate or a better distribution of income than alternative win-win policies. Some win-lose policies, such as public investment in remote areas, may more effectively address salient country-specific features of poverty or income distribution than the alternatives.

Fourth, individual growth policies may be modified from canonical form to incorporate or better accommodate re-distributive elements. Additionally, this may help to make policy reform politically feasible. For example, trade liberalisation rarely consists of a trade policy regime shift from autarky to free trade. The policy shift is typically not radical and may exclude or protecting sensitive sectors (see Rodrik, 2004, for a description of the heterodox liberalisations in Mauritius and China).

Finally, to avoid trade-offs in overall outcomes, and thus make win-lose policies more feasible and beneficial, countries may combine growth policies judiciously. That

is, a strategy is not a single policy, but a combination or sequence of policies. For example, a poverty reduction strategy may package together land reform, education subsidies and trade liberalisation policies. Strategists should be aware too that policies operate differently alone than together with other policies, because the policies interact with each other.

These considerations indicate that growth strategy should respond to the features of poverty, growth and distribution processes in individual poor countries. In this they would reflect the range of analyses and variety of growth and distribution policies for poverty reduction proposed in our country research papers. Poverty-informed growth strategy depends on context, and is likely to differ from country to country. Its legitimacy depends not only on conformity to conventional international formulations, but also on how it reflects local features of poverty and growth and income distribution processes.

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New Evidence for Exports-Led Growth, Tradables-Led-Growth and Manufacturing-Led Growth: Causality Test Results for Turkey

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Abstract

Using quarterly Turkish data for the period 1987-2004, we first test the Export-Led-Growth hypothesis in two alternative forms: while the test results are supportive of a bidirectional causal relationship between the "growth of export revenues" and "economic growth", we have not found any evidence of a causal relationship between the "share of exports in GDP" and "economic growth". On the other hand, we found evidence of bidirectional causality between the respective output shares of tradables, in general, and manufacturing, in particular, and economic growth. The Granger causality test results also produced evidence of a unidirectional causality running from the "share of mining in output" and "economic growth". However, there is no evidence of causality between the respective output shares of tradables, in general, and each sub-sector of tradables, in particular, and the share of exports in domestic output.

Resumen**

Utilizando datos trimestrales de Turquía para el periodo 1987-2004, primero testeamos la hipótesis sobre el Crecimiento Orientado a las Exportaciones (ELG) desde

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** La traducción del resumen del inglés al español es responsabilidad de los editores de la Revista Latinoamericana de Desarrollo Económico.

dos enfoques alternativos. Por un lado, si los resultados del test corroboran una relación de causalidad bidireccional entre el 'crecimiento de los retornos de las exportaciones' y el 'crecimiento económico', en los resultados no se encontró evidencia en la relación de causalidad entre 'la participación de las exportaciones en el PIB' y el 'crecimiento económico'. Por otro lado, encontramos evidencia de una relación causal bidireccional entre el crecimiento económico y la participación en el producto, de los bienes transables en general y los bienes manufacturados en particular. Los resultados del test de causalidad de Granger también muestran una evidencia de la relación causal unidireccional entre la 'participación de la minería en el producto' y el 'crecimiento económico'. Sin embargo, no existe evidencia de causalidad entre la participación en el producto de los bienes transables, en general, y cada subsector transable, en particular, en la proporción de exportaciones respecto al producto.

1. Introduction

Exports-Led Growth (ELG) hypothesis, which argued that export growth contributes positively to economic growth, has caused great deal of controversy in literature simply because the empirical evidence based on testing causality between exports and output is, at best, mixed and contradictory. Some of the studies approving ELG hypothesis include Michaely (1977), Balassa (1978), Chow (1987), Thornton (1996), Doyle (1998), and Xu (1996). Some other studies, particularly disapproving ELG hypothesis, include Granger (1969), Jung and Marshall (1985), Ahmad and Kwan (1991), Shan and Sun (1998), Cuadros *et al.* (2001), and Sharma and Panagiotidis (2003). Islam (1998) and Konya (2000) are only two of the studies reporting mixed results for different countries.

The contradictory nature of the empirical results is particularly noteworthy simply because the theoretical justifications that are been put forward for ELG hypothesis have been very convincing. The most important ones among these arguments have been listed by Hatemi and Irandoust (2000) as follows: (a) exports facilitate the exploitation of economies of scale; (b) exports relax the binding foreign exchange constraint to allow increases in imports of capital goods and intermediate goods; (c) exports enhance efficiency through increased competition; (d) exports promote the diffusion of technical knowledge, in the long-run, through foreign buyers' suggestions and learning by doing

The fact that some of the empirical results have not been supportive of ELG hypothesis for at least some countries suggest that one cannot categorically assume that marginal factor productivities are necessarily higher in export sector relative to non-export sector. In other words, the export promotion strategy may not represent a safe path for achieving higher growth rate for a developing economy. This view is also supported by the results of micro studies that investigated differences in productivity and economic behavior between exporting and non-exporting firms. For example, the basic finding of both Clerides *et al.* (1998) and Aw *et al.* (1998) is that individual firms, which choose to export in some sub-sectors of manufacturing industry of selected East Asian countries, were already more productive than non-exporting firms before they started to export. Thus, it may be the case that firms are first productive and then exporting rather than the other way around.

The inability of both macro and micro empirical studies to provide evidence in favor of ELG hypothesis has motivated some researchers to investigate the relationship and the nature of the causality between a particular kind of exports (namely manufacturing exports) and economic growth (see Abu-Qarn and Abubader (2000), Hossain and Karunaratne (2002), Bhattacharyya (2001), and Njikam (2003)). The implicit motivation behind this new line of research must have been the intuition that not all kinds of economic activity (aimed at exporting or not) have identically the same effects on economic growth. One important reason for this is the insight that "Learning Potential" is not the same in all activities. In other words, the marginal contribution of "one unit of learning" to total output, in a certain activity, may be higher than others because economic activities possess a large spectrum of opportunities for learning. Therefore, if exporting firms tend to specialize in performing these activities, which have relatively higher potential than others, aggregate growth rate of the economy is likely to be positively affected.

Bhattacharyya (2001) has shown that, during the last decade, for most of the Asian countries, not only the export composition has been changing in favor of manufactures but also within manufacturing exports, an increasing proportion of the region's exports are being accounted for by products, which have a higher level of technology and science. For Asia as a whole, the export share of technology or science-based product categories rose from 42.5 per cent in 1980 to 59.7 per cent in 1994. However, as noted before, whether this trend is largely responsible or not, for the remarkable growth

performance of most of the Asian countries over the same decade is an open question. The role played by manufacturing exports as an engine of growth has been analyzed using Granger causality tests for Bangladesh by Hossain and Karunaratne (2002) and for nine MENA (Middle East and North Africa) countries by Abu-Qarn and Abubader (2000). In the case of Bangladesh, the researchers found that, in addition to total exports, manufacturing exports were causing growth in unidirectional way. However, the results of latter study not only rejected ELG hypothesis, for almost all the countries investigated, but also showed that there is no causality between manufacturing exports and growth for countries with relatively low shares of manufactured exports in total exports and for countries with relatively high shares of manufacturing exports they reported bidirectional causality. These countries included Turkey, Morocco, and Tunisia. Only in the case of Israel, a country with the highest ratio of manufactured exports, they found that causality runs in unidirectional way from manufactured exports to economic growth. Moreover, Abu-Qarn and Abubader (2000) indicated that manufactured exports may have a positive impact on economic growth once a minimal threshold of manufactured exports has been reached. In addition, they argued that their interpretation is in line with the observation that developed countries are characterized by a high share of manufacturing in total exports.

The results regarding the possible impact of manufacturing exports on economic growth can provide important insights regarding the critical role that manufacturing industry could still have in determining the long-run economic growth. A study with U.S. data revealed that the productivity growth has been much faster in manufacturing sector relative to services, which to a large extent represents non-tradable sector of the economy particularly for developing countries (Weil, 2005). Such a study suggests that it could be more beneficial to relate the empirical results, regarding the potential growth enhancing effects of manufacturing exports, to the fundamental insights of growth theory. In fact, the empirical applications of Solow's growth model and most versions of endogenous growth theory have suggested that the technological progress and human capital accumulation are the most important engines of growth in the long-run (Sachs and McArthur (2002), Lucas (2000)). On the one hand, technological progress depends on the rate of innovation of new technologies and the rate of adoption or the rate of diffusion of new foreign technologies. On the other hand, Lucas (2000) argued that "learning on the job" seems to be the most important factor (as a determinant of the rate of human capital accumulation) leading to high rate of growth for a single

country. Moreover, he argued that, for "learning on the job" to happen on a sustained basis, it is necessary that workers and managers continue to take on tasks that are new to them. Consequently, we can raise two fundamental questions: What are the sectors that are most likely to have relatively higher rate of human capital accumulation based on the process envisioned by Lucas? And, are these sectors part of tradable sector that produces exportables and importables, or non-tradable sector of the economy?

The work of Rivera-Batiz and Romer (1991) has suggested that integration of an economy with the global economy (defined as knowledge spillovers or trade in goods or both) is likely to have positive effects on growth by increasing the stock of knowledge available to that country. Consequently, this positive effect could be also interpreted as "learning by trading". However, as noted earlier, "learning potential" may not be the same in all activities or sectors of the economy. Therefore, the growth effect of trade will particularly depend on the extent to which it leads to an increase in the relative size of the sector that has relatively high "learning potential" and "spillover effects" for the entire economy. For a typical developing country, which is "technological follower" instead of "technological leader", the rate of technological progress will critically depend on the rate of adoption of new foreign technologies. Consequently, the sector with the highest potential of adoption (or diffusion) of new foreign technologies is likely to have higher rate of technological progress. This in turn means that the aggregate growth rate of the economy will critically depend on the relative size of the sector with the highest "learning potential" in the entire economy.

Balassa (1988) argued that the positive technological effects of competition would be operational not only in case of exporting firms but also the competition created by imports for domestic firms in home markets. This would provide incentives for firms to try to improve their operations and keep up with modern technology. In addition to competitive pressure of imports for cost reduction, quality improvement and efficiency, the mere presence of imported products can simply contribute to the flow of new ideas and stock of accumulated knowledge leading to positive externalities in terms of production of new range of products both for home and global markets. Balassa's argument regarding the competitive effect of imports has been supported by two studies for Turkey where the higher import penetration resulting from substantial trade reforms in the 80's were found to be correlated with lower price-cost markups (Foroutan (1992), Levinsohn (1993)). Based on these insights, one can intuitively argue

that the degree of integration of an economy with the global economy would be a function of not only the relative output share of its exports (or that of exports plus imports) but also the relative size of its tradable sector. In other words, the sector that produces exportables and importables can be considered to be relatively more integrated with the global economy since, by definition, these are the sectors that are facing the global competitive pressures both in global export markets and at home through the presence of imports. It follows that one can intuitively expect to have a higher rate of flow of international knowledge and creation of new ideas in the tradable sector. And this factor is likely to affect both the rate of technological progress and the rate of human capital accumulation positively for the tradable sector. Hence, this may be one of the important reasons behind the empirical evidence that suggests that productivity growth has been historically higher in tradable sector relative to non-tradable sector (Gehrels, 1991).

The results of the empirical studies investigating the nature of the causality between manufacturing exports and economic growth suggest that manufacturing activity may be the key engine of growth among all tradable sub-sectors. Previous literature on convergence of labor productivity levels of less developed countries to those of developed countries, suggested that the "rate of catching-up" will critically depend on the extent to which specialization structure of the country in question is similar to that of the countries operating at the technological frontier (Pasinetti (1981), Beelan and Verspagen (1994)). Besides, the empirical work of Soete and Verspagen (1993) has shown that, for almost all manufacturing sectors, specialization patterns of countries have been converging. This, in turn, underlines the significance of manufacturing sector in terms of accumulation of "stock of knowledge" of the entire economy through the flow of international knowledge. Beelan and Verspagen (1994) have later shown that Turkey was one of the countries in which manufacturing industry has been the driving force behind the increase in the "degree of specialization of the economy.

The relationship between exports and growth has been tested for Turkey in a number of studies reporting contradictory results. While the empirical results of Xu (1996) and Greenway and Sapsford (1994) have supported the ELG hypothesis for Turkey, more recent studies by Abdulnasser and Manuchehr (2000), and Abu-Qarn and Abubader (2000) have not been supportive of a causal relation running from exports to

economic growth. Therefore, the issue of a possible relationship between the "degree of openness" or the "degree of integration" and economic growth can still be taken as an open question for Turkey.

The main motivation of our paper is to build on the insights of the earlier literature regarding not only the ELG hypothesis but also the likely interaction between the degree of integration, the accumulation of stock of knowledge through the flow of international knowledge, and the growth rate of an economy. We postulate that the degree of integration with global economy, which has been traditionally measured by the ratio of exports to domestic output, can be alternatively (or even better) measured by the relative size of the tradable sector in domestic output. As explained earlier, our justification for this assumption is related to the fact that, by definition, this is the sector that is exposed to pressures of global competition both through the presence of imports at home, and export substitutes in export markets. This aspect of the tradable sector is likely to make relatively more dynamic and creative than non-tradable sector. In other words, one can intuitively expect the tradable sector to have relatively faster accumulation of stock of knowledge and therefore relatively faster creation of new ideas, due to the relatively faster inflow of international knowledge in this sector. Therefore, our theoretical expectation is that this sector is likely to have relatively higher rate of technological progress and hence its relative size in the economy could positively affect the aggregate growth rate of the economy.

In light of the above discussion, we now briefly state the main goals of our study that utilizes quarterly data for Turkey spanning the time period 1987-2004: The first goal is to test ELG hypothesis for Turkey using two alternative specifications of the hypothesis; firstly we investigate the nature of the causality between the share of exports in GDP and economic growth (as measured by the growth rate of real GDP) and then do the same for the relationship between the growth rate of export revenues (in dollar terms) and economic growth. Our second goal is to investigate the existence of causality between the relative share of tradable sector in GDP and economic growth. Thirdly, we attempt to find out the direction of causality (if any) between the relative share of each sub-sector of tradables and economic growth. In particular, we are interested in testing our hypothesis that the relative share of manufacturing industry in GDP should be causing economic growth. Naturally, we also carry out the causality tests for the relationship between the respective relative shares of agriculture and mining in

GDP and economic growth separately. Finally, we attempt to find out whether or not there is any kind of causality between the share of exports in GDP and the respective relative share of each sub-sector of tradables in GDP.

The organization of the rest of the paper is as follows: In Section 2 we describe the data and the empirical methodology on which we base the causality tests. Section 3 is devoted to the presentation of empirical results. The last section concludes with a summary and policy implications of the results.

2. Data and Methodology

2.1. Data

The data consists of a set of Turkish macroeconomic variables obtained from DATASTREAM database. The dataset includes GDP, agriculture, manufacturing, mining, and exports and are expressed in U.S. dollars. The data are quarterly, seasonally adjusted and cover the period 1987:1 to 2004:1. All data points are transformed into logarithmic scale and used to compute GDP growth, percentage share of agriculture in GDP, percentage share of manufacturing in GDP, percentage share of mining in GDP, percentage share of exports in GDP, and export growth.

Our empirical investigations are mostly related to a large body of empirical work on finding relations between macroeconomic fundamentals in terms of Granger causality. In most of similar works, and to examine the possible causality relations between the variables of interest, the statistical properties of the data must be first checked for stationarity and cointegration. The stationarity is diagnosed by conducting a unit root test and the cointegration is performed using Engle and Granger's (1987) and Johansen (1988) procedures. Our empirical work is organized around these tests.

2.2. Methodology

2.2.1. Unit Root Test

The conventional wisdom tells that a unit root test is often necessary before conducting empirical studies on macroeconomic data. A first visual inspection of the

data from Figure 1 shows that GDP growth and Exports growth display stationarity, as the mean is constant throughout the sample period, and a certain trend in the other series suggesting a possible unit root. In fact, since Nelson and Plosser's (1982) paper, the unit root property of macroeconomic data is proven to be widely accepted. Thus, the Augmented Dickey and Fuller (1979) (ADF) test is generally used as in the following form:

$$(1) \quad y_t = a + bt + (\rho - 1)y_{t-1} + \sum_{i=1}^{k-1} \vartheta_i y_{t-i} + \varepsilon_t$$

where y_t is a macroeconomic variable such as GDP, t is a trend variable, and ε_t is a white noise term. y_t is said to have the unit root property if failing to reject H_0: $p=1$

In Table 1, we show the Augmented Dickey and Fuller unit root test on GDP growth, percentage share of agriculture in GDP, percentage share of manufacturing in GDP, percentage share of mining in GDP, percentage share of exports in GDP, and exports growth. The unit root hypothesis is rejected at 1 per cent level for the GDP growth and Exports growth to confirm their stationarity. At the 5 per cent level, the unit root is rejected for the percentage share of mining and the percentage share of exports in GDP. The remaining variables display the unit root property. These results suggest us to correct for such inconvenience by shifting the series to their first difference and hence lead to stationarity.

Table 1
Results of the ADF Unit Root Tests

	t Value	p Value
GDP growth	-8.282	0.000 *
Agriculture (% GDP)	-2.002	0.588
Manufacturing (% GDP)	-3.092	0.116
Mining (% GDP)	-3.910	0.017 **
Exports (% GDP)	-4.018	0.012 **
Exports growth	-4.394	0.004 *

* = 1 per cent significance level
** = 5 per cent significance level. Mackinnon Critical values obtained from EViews output for rejection of hypothesis of a unit root are:
-4.1013 for 1 per cent, -3.4779 for 5 per cent, and -3.1663 for 10 per cent.
Data source: DATASTREAM.

Figure 1: Quarterly data of GDP growth, Agriculture (% of GDP), Manufacturing (% of GDP), Mining (% of GDP), Exports (% of GDP), and Exports growth. Sample period 1987:1 to 2004:1.

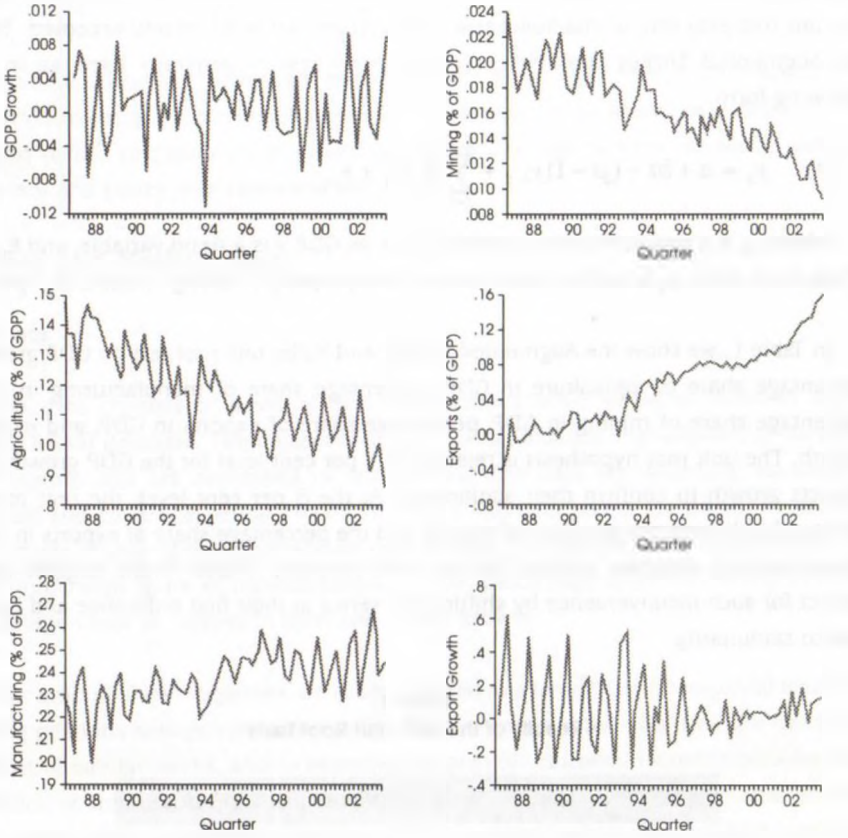
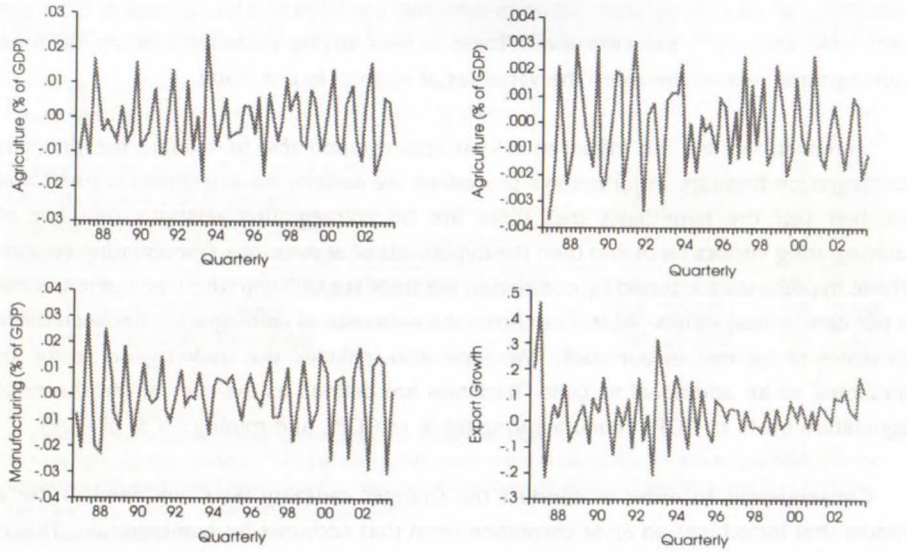


Figure 2 shows the stationary behavior of the first difference of percentage share of agriculture in GDP, percentage share of manufacturing in GDP, percentage share of mining in GDP, and percentage share of exports in GDP. It is worth to mention that the period of upswing of the growth of the GDP in Turkey is equivalent to the period of downswing of the both the agricultural sector (in % of GDP) and the mining sector (in % of GDP), and the period of upswing of the manufacturing sector (in % of GDP).

Figure 2: Quarterly data of the first difference of Agriculture (% of GDP), Manufacturing (% of GDP), Mining (% of GDP), Exports (% of GDP). Sample period 1987:1 to 2004:1.



2.2.2. Cointegration

To test for possible cointegration effect between the macroeconomic series, we first use the Engle and Granger (1987) cointegration test and then the Johansen (1988) test for confirmatory purposes. The Engle-Granger test involves the regression of one variable, say y_t, on another, say x_t, to obtain the ordinary least squares (OLS) residuals, such as:

$$(2) \quad y_t = \alpha + \beta x_t + u_t$$

A test of the null hypothesis of no cointegration is based on testing for a unit root in the regression residuals, u_t, using the ADF test and simulated critical values which correctly take into account the number of variables in the cointegrating regression. As in Equation 1, we use a constant, a trend variable, and selected number of augmenting lags based on the AIC + 2 rule, which corresponds to reasonable beliefs about the longest time over which one of the variables could help predict the other (in our case the lag is found to be k = 2). The t-values and the asymptotic p-values are computed

using the coefficients in MacKinnon (1991). The ADF statistics of Engle-Granger cointegration test of the residuals are shown in Table 2 and suggest that the null hypothesis of no cointegration between each two variables can be rejected at the 1 per cent level and the 5 per cent level. There is thus strong evidence that we do have cointegrating relation between the variables of interest in our study.

Moreover, we use the Johansen (1988) cointegration test to validate the previous cointegration findings. In Johansen's procedure, we assume no deterministic trend and we first test the hypothesis that there are no cointegrating relations (number of cointegrating vectors $r = 0$) and then the hypothesis of at most one cointegrating vectors. These hypotheses are tested by comparing the trace statistic with the 1 per cent and the 5 per cent critical values. Table 3 confirms the existence of cointegration between these variables of interest in our study. We have also included the traded good sector, or tradables, as an additional variable. Tradables are defined as the sum of the shares of agriculture (in % of GDP), manufacturing (in % of GDP), and mining (in % of GDP).

Consequently, in order to conduct the Granger causality tests, we need to use a model that introduces an error correction term that accounts for cointegration. This is referred as to use an Error Correction Model (ECM) of Johansen (1988).

Table 2
Engle-Granger Cointegration Test Results

Residuals obtained by regressing	ADF Statistic	*p* Value
Level of Agriculture (% of GDP) on GDP growth	-3.766	0.029 **
Level of Manufacturing (% of GDP) on GDP growth	-5.524	0.000 *
Mining (% of GDP) on GDP growth	-10.558	0.000 *
Tradables (% GDP) on GDP growth	-4.718	0.000 *
Exports growth on GDP growth	-4.456	0.003 *
Exports (% of GDP) on GDP growth	-11.340	0.000 *
Exports (% of GDP) on Level of Agriculture	-4.967	0.000 *
Exports (% of GDP) on Level of Manufacturing	-3.759	0.000 *
Exports (% of GDP) on Mining	-5.539	0.000 *
Exports (% of GDP) on Tradables (% GDP)	-15.493	0.000 *

* = 1 per cent significance level, ** = 5 per cent significance level. Mackinnon (1981) Critical values obtained from EViews output for rejection of hypothesis of a unit root are: -4.1013 for 1 per cent, -3.4779 for 5 per cent, and -3.1663 for 10 per cent.
Data source: DATASTREAM.

Table 3
Johansen Cointegration Test Results

	Hypothesis	Trace Statistic
Level of Agriculture (% of GDP), GDP growth	HA 38.781*	HB 14.157
Level of Manufacturing (% of GDP), GDP growth	HA 54.326*	HB 24.829
Mining (% of GDP), GDP growth	HA 39.126*	HB 15.730
Tradables (% of GDP), GDP growth	HA 47.396*	HB 15.982
Exports growth, GDP growth	HA 27.173*	HB 6.289
Exports (% of GDP), GDP growth	HA 20.723*	HB 2.134
Exports (% of GDP), Level of Agriculture (% GDP)	HA 22.436*	HB 1.266
Exports (% of GDP), Level of Manufacturing (% GDP)	HA 19.474*	HB 0.765
Exports (% of GDP), Mining	HA 28.241*	HB 2.548
Exports (% of GDP), Tradables	HA 26.294*	HB 1.452

HA: H_0: r = 0 against H_0: r =1
HB: H_0: r = 1 against H_0: r =2
r is the number of cointegration vectors based on Johanson's method
*= 1 per cent significance level , **= 5 per cent significance level and hence reject the Null Hypothesis. Critical values are obtained from EViews output for rejection of hypothesis of: 20.04 for 1 per cent, and 15.41 for 5 per cent. We are assuming a linear deterministic trend.
Data source: DATASTREAM.

2.2.3. Granger Causality

In general, the use of the standard Granger causality test when the series are cointegrated leads to invalid causal information. Therefore, the use of error-correction modeling in testing Granger causality is of paramount interest to get correct assessments.

Adopting the bivariate ECM model to test the Granger Causality between and, suggests the use of the following model:

$$\Delta y_t = \alpha_o + \delta_1 (y_{t-1} - \beta x_{t-1}) + \sum_{i=1}^{k-1} \alpha_1 \Delta y_{t-i} + \sum_{i=1}^{k-1} \alpha_{2i} \Delta x_{t-i} + \mu_{1t} \quad (3)$$

$$\Delta x_t = \beta_o + \delta_2 (y_{t-1} - \beta x_{t-1}) + \sum_{i=1}^{k-1} \beta_1 \Delta x_{t-i} + \sum_{i=1}^{k-1} \beta_{2i} \Delta y_{t-i} + \mu_{2t}$$

Here δ_1 and δ_2 denote speeds of adjustment of the variables y_t and x_t, respectively, to the long-run equilibrium, and μ_{1t} and μ_{2t} are serially uncorrelated errors. In this formulation, failing to reject H_{01}: $\alpha_{21} = \alpha_{22} = \cdots = \alpha_{2k} = 0$ and $\delta_1 = 0$ implies that y_t does not Granger cause x_t, while failing to reject H_{02}: $\beta_{21} = \beta_{22} = \cdots = \beta_{2k} = 0$ and $\delta_2 = 0$ indicates that x_t does not Granger cause y_t.

3. Empirical Results

The results of the pairwise Granger causality test are shown in Table 4. These results stand on their own as empirical facts. We observe that there is evidence of bidirectional causality between GDP growth and manufacturing, and GDP growth and export revenues (in dollar terms). Additionally, the changes in export growth and export revenues lead that in agriculture. Moreover, there is a significant relationship between tradables in general, especially manufacturing and mining, and GDP growth. Thus, it a confirmation of our previous hypothesis that there is a positive relationship running from the relative share of manufacturing in output and the relative size of tradable sector to economic growth. In addition, the ELG hypothesis is supported with export revenues (in dollar terms) but not with export as share of GDP.

These results suggest a number of inferences that could have important implications for policy-makers. First, we notice evidence that growth in the traded good sector has enhanced the growth of the GDP, and that the growth in the agriculture sector has the least possibility of contributing to the growth of the GDP. In other words, a growth propelled by the agriculture sector is the slowest growth possible. Possibly, in the long-run, the Turkish economy is transforming from an agrarian to a service-oriented one. Moreover, any expansion in the traded good sector will produce a growth effect on GDP and vice versa. We can even speculate that the expansion in manufacturing and mining sectors will trigger this effect and can be larger than the growth effect produced by the agriculture sector. However, any expansion in the growth of the GDP will produce an effect of the growth of agriculture. For the Turkish economy, a growth fuelled by the growth in the traded good sector could be seen as a fast growth.

Furthermore, we find that though the traded good sector is a much hyped sector of the economy, yet, it has to be proven whether it has large or very little impact upon the growth of the GDP. The service sector grows along with the growth in the GDP and may

Table 4
Pair wise Granger Causality tests

Null Hypothesis (_implies does not Granger cause)	Wald Statistic	p value
Level of Agriculture (% of GDP) → GDP growth	2.961	0.227
GDP growth → Level of Agriculture (% GDP)	2.266	0.118
Level of Manufacturing (% of GDP) → GDP growth	11.165	0.003 *
GDP growth → Level of Manufacturing (% GDP)	10.742	0.004 *
Mining (% of GDP) → GDP growth	21.140	0.000 *
GDP growth → Mining (% GDP)	4.630	0.098
Tradables (% of GDP) → GDP growth	11.040	0.004 *
GDP growth → Tradables (% GDP)	4.766	0.092
Exports growth → GDP growth	10.950	0.006 *
GDP growth → Exports growth	8.697	0.012 **
Exports growth → Level of Agriculture (% GDP)	6.542	0.038 **
Level of Agriculture (% GDP) → Exports growth	0.134	0.934
Exports growth → Level of Manufacturing (% GDP)	1.458	0.482
Level of Manufacturing (% GDP) → Exports growth	3.185	0.203
Exports growth → Mining (% GDP)	2.950	0.228
Mining (% GDP) → Exports growth	4.114	0.127
Exports growth → Tradables (% GDP)	2.760	0.251
Tradables (% GDP) → Exports growth	0.333	0.846
Exports (% GDP) → GDP growth	1.880	0.390
GDP growth → Exports (% GDP)	0.274	0.871
Exports (% GDP) → Level of Manufacturing (% GDP)	3.332	0.265
Level of Manufacturing (% GDP) → Exports (% GDP)	2.653	0.189
Exports (% GDP) → Level of Agriculture (% GDP)	8.543	0.014 **
Level of Agriculture (% GDP) → Exports (% GDP)	1.175	0.555
Exports (% GDP) → Mining (% GDP)	4.257	0.119
Mining (% GDP) → Exports (% GDP)	3.733	0.154
Exports (% GDP) → Tradables (% GDP)	2.926	0.231
Tradables (% GDP) → Exports (% GDP)	3.159	0.206

* : Significant at 1 per cent level
** : significant at 5 per cent level
*** : significant at 10 per cent level, and hence reject the Null Hypothesis.
Data source: DATASTREAM

have very little potential to accelerate or even to retard the growth of the GDP. In addition, the manufacturing sector is indeed very important, while the non-traded good sector may or may not help in pushing up the GDP. This is merely due to the fact that Granger causality did not provide signs of causality relationships. If the services

represent the new economy and the manufacturing represents the old economy, then it is still the old economy that holds things together when the new slip. Services may be the sector where growth is concentrated because the other opportunities have dried up, yet, should growth revive in the manufacturing sector, and then GDP growth will revive too. The industry should look more towards the growth of the manufacturing sector rather than towards the agricultural sector for the revival of the "aggregate demand".

4. Conclusions

One of the goals of our work was to test the ELG hypothesis for Turkey. We tested the hypothesis using quarterly data in two alternative forms. When ELG hypothesis was expressed in terms of the relationship between the share of exports in GDP and economic growth, we found no evidence of causality between the two variables. However, when we investigated the nature of the causality between the growth of export revenues (in terms of U.S. dollars) and economic growth, the causality tests indicated the presence of a bi-directional causality between the two variables and therefore supported the ELG hypothesis.

One of the fundamental insights of our discussion in the first section of the paper was the argument that "degree of openness" of an economy can be alternatively measured by the relative share of tradable sector in economic activity. When we investigated the nature of causality between "openness" and economic growth using this measure of openness, Granger causality tests have produced evidence of unidirectional causality running from the relative share of tradables in GDP to economic growth expressed in terms of growth rate of real GDP. When we investigated the nature of the causality between the relative output share of each sub-sector of tradables and economic growth, the test results have produced evidence of bi-directional causality between the relative output share of manufacturing and economic growth and unidirectional causality running from the relative output share of mining to economic growth. These results are particularly supportive of the argument that the rate of technological progress and therefore growth rate of total factor productivity are likely to be relatively higher in manufacturing sector and that any increase in the relative size of this sector is likely to positively affect the aggregate growth rate of the economy. Even though the relative output share of mining in Turkey is negligible (in the range of 2-3

percent only) and the scope of mining seems to be limited given the known mineral resources of the country, the test results suggest that industrial policies should focus on facilitating the transfer of resources from particularly agriculture and services into not only manufacturing but also mining industries.

Furthermore, our examination of the data produced no evidence about the existence of causality between the share of exports in GDP and the relative share of tradables in GDP in general. Similarly, we found no evidence of the existence of causality between the share of exports in GDP and the respective relative shares of manufacturing and mining in GDP separately. In other words, producing relatively larger share of domestic output in tradable sector in general (or in manufacturing and mining industries separately) does not granger cause bigger share of exports in GDP. Likewise, increasing the share of exports in GDP does not granger cause an increase in the output share of neither tradables in general or that of manufacturing and mining separately. On the other hand, the tests produced evidence of unidirectional causality running from the share of exports in GDP to the share of agriculture in GDP. Similarly, our analysis of the data showed the existence of unidirectional causality running from growth of export revenues to the share of agriculture in GDP. However, we have not found evidence of any kind of causality between the growth of export revenues and the respective relative output shares of tradable sector in general, and manufacturing and mining industries individually. We find this last result particularly peculiar since one would intuitively expect to see some kind of causality particularly between the share of manufacturing in GDP and growth of export revenues. In other words, producing relatively larger amount of tradables and therefore exportables could be expected to have some impact on export growth. However, the Turkish data did not support this argument.

Future research may attempt to investigate the causality between the relative output shares of tradable sector in general and manufacturing in particular, and economic growth for other countries and see whether our results for Turkey can be generalized. If our results are supported by other studies for a variety of countries, which may include cases for which ELG hypothesis has not been supported by the data, this can provide new evidence for the hypothesis that "openness" positively affects economic growth, and provide new insights regarding the best way of measuring the "degree of openness" or "degree of integration of an economy with the global economy" particularly in terms of the "rate of flow of international knowledge and ideas".

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